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Responses to questionnaires sent only to schools known to have language laboratories show that as of 1958, 240 colleges and universities and 64 secondary schools in the U.S. have such laboratories. Of 40 foreign languages, French, Spanish, German, and Russian are taught most frequently. Laboratory organization plans vary; they include classrooms, listening rooms, practice laboratories, mobile laboratories, and drill rooms. Representative scheduling is 30 minutes per session, four times a week, with no more than one session a day. For 91 colleges and universities that submitted cost data, installation costs ranged from under $1,000 to over $10,000, with yearly maintenance averaging $21 for 137 colleges and $67 for 19 high schools. Forty-six colleges and universities charge student fees averaging five dollars per semester. The aural-oral approach favored by language teachers is aided by audio-instructional materials which encourage studentparticipation and which feature several native speakers on one recording. While further research is needed to discover if language laboratories can alleviate teacher shortages, these findings indicate self-evaluation, and advancement. Appendices include the questionnaire, a sample description of laboratory design and functions, and a list of laboratories. (JO)

Bulletin 1959, No. 3

Foreign Language Laboratories IN Schools AND Colleges

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Foreword

Installations of mechanical and electronic equipment to facilitate language learning, generally known as language laboratories, came into use during and after the specialized language training programs of World War II. Their effectiveness in providing increased experience in hearing and speaking a foreign language is being widely recognized now that the international responsibilities of the United States have intensified the need for Americans to communicate directly with many other peoples of the world.

Since the development of language laboratories may still be considered experimental, little has been published about the instructional techniques involved in their use. Inquiries from school administrators and language teachers have indicated a need for more information about the location of language laboratories as well as for some detailed knowledge about the equipment, use, and educational value of such installations.

To obtain this type of information, the Office of Education, in cooperation with The Modern Language Association of America, conducted a survey of language laboratories in secondary schools and institutions of higher education during school year 1957-58. The procedure was to send a short questionnaire to all the schools and colleges known to have a language laboratory and subsequently to all additional places suggested by persons returning the questionnaire. Although this process was continued over a 4-month period, some schools having a language laboratory may not have been reached in the survey. Additional information would be welcomed.

The present bulletin contains a summary of replies to the questionnaire and other pertinent data received from language laboratory directors who supplemented the completed form by sending accounts of how their laboratory was established, how it is maintained and operated, how instructional materials are prepared and used, how problems and difficulties are overcome, and other discussions of assistance to persons planning or operating a language laboratory.

The bulletin is intended to serve the following groups:

(1) school administrators and teachers who are planning a language laboratory,

(2) laboratory directors and instructors who wish to establish exchanges with other language laboratories,

(3) research directors, teachers, and graduate students who are interested in experimentation in the use of audio-visual materials in language learning,

(4) librarians and directors of curriculum centers who are expanding their services to language departments,

(5) students who want to concentrate on the spoken language along with reading and writing skills in a foreign language.

To The Modern Language Association of America and the many school systems, colleges, universities, and individuals who cooperated in this study the Office of Education expresses appreciation.

J. DAN HULL,
Director, Instruction, Organization, Services
Division of State and Local School Systems.

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Foreign Language Laboratories in Schools and Colleges

Introduction

In order to obtain as full an account as possible of the installations which the schools and colleges regard as language laboratories, the author of the questionnaire for this survey did not attempt to define the term *language laboratory*. (See questionnaire in appendix II.)

As anticipated, the results of the study show a great variety of facilities and a wide divergence of opinion concerning what constitutes a language laboratory. The laboratories reported are of all sizes, have many types and combinations of equipment, and employ the equipment in numerous ways. A few schools with one tape recorder and one phonograph reported that they had a language laboratory; others with considerable equipment stated that they did not have a laboratory. The following comments, however, reveal that such schools have facilities which could be considered rudimentary forms of a laboratory.

> We do not have a foreign language laboratory in the true sense of the word. There is no opportunity for individual student work. The tape recorder is used for recording and playback of conversations. The phonograph is used for group imitation of native speakers and for pronunciation practice. We use records to accompany our present texts and next year we plan to use other supplementary records.
>
> We have half a dozen "isolation booths" where students may use commercial records, but no coordinated plan.
>
> We have equipment for drill in hearing and speaking a foreign language, but no special room for use as a laboratory.
>
> We have the magnetic disc recorders and are waiting for the booths, two of which will be placed in each of three classrooms. That is *not* a language laboratory.

Although in its present form the language laboratory is a comparatively recent development, it would be a mistake to assume that it has no antecedents. For many years foreign language teachers have supplemented their class work and stimulated interest by the use of phonograph records and films. The incorporation of audio-visual materials into the main content of the course was not extensive, however, before World War II. Then the sudden need for people who could understand and speak foreign languages led to intensive language instruction in the Army Specialized Training Program, the Civil Affairs Training Schools, and the Navy Schools of Military Government and Administration. During the war years intensive programs of language and area studies for military personnel were conducted in 57 different colleges and universities, the teaching being done for the most part by the regular college language instructors aided by native drill masters in mimicry-memorization sessions. These programs made more extensive use of training aids, audio and visual, than was normal in civilian education, for it was necessary to audit radio broadcasts in foreign territory and to communicate much vital information by telephone. Phonograph records, which were prepared to accompany the basic language texts, provided active drill rather than passive listening by leaving pauses on the record during which the student repeated the phrases.

In the war years and immediately following, several institutions made modifications in their language programs and much discussion centered about the feasibility of adapting certain features of the ASTP language teaching to regular classroom use. This interest was quickly reflected in the professional journals. One of the first articles dealing with the use of mechanical equipment as an actual part of the teaching process describes an experiment conducted from 1941-44 at Green Mountain Junior College "to provide intensive individualized oral and aural training."[1] For this purpose a language "studio" for oral practice was opened in the afternoon and evening with an instructor or student assistant in charge. Records of the first 10 lessons of the text were made at the college, and beginning students were required to spend at least 15 minutes every day listening to the records and practicing pronunciation, accent, and intonation. More advanced students used commercial recordings "as models of pronunciation for oral drill and as a means of developing aural comprehension." Each student made a recording on an individual disc at the beginning and again at the end of the course, and part of his grade was based on the oral progress demonstrated. Equipment for the studio consisted of an electric phonograph, 4 headsets, a record cutter, blank discs for recording, and commercial discs. The total cost, including $250 for student assistants, was $387.

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[1] Eddy, Frederick D. The Language Studio. *The Modern Language Journal*, April 1944.

At Birmingham Southern College a foundation grant in 1943 enabled the language department to buy a portable phonograph and three sets of records. This unpretentious outlay of "laboratory equipment" was kept in a rarely used room on the top floor of the college library where students went at odd hours, put on earphones, and listened "to get the content of incoming messages." The instructor justified its use with the slogan, "It brings languages to life because it brings life to languages."[2]

Some of the principles which have since been widely adopted by exponents of the language laboratory were expressed a year later in an article on audio-visual aids.

> The use of such material should be carefully planned and utilized as an integral part of the course; the use of audio-visual aids does not interrupt the learning; it is a vital part of the learning process. * * * If speaking and understanding the spoken language are admitted as legitimate objectives in our course then the inclusion of these mechanical aids in our language curriculum becomes imperative. * * * Pupils can learn to understand only by having many opportunities to hear the language. Effective use of records with and without the script emphasizes the importance of correct pronunciation of individual sounds and words and clear enunciation of complete phrases. It trains students to listen, to distinguish differences in sounds and to imitate what they hear.[3]

The author of this article recommended that students be graded occasionally on their pronunciation on the theory that "what is important is always tested by the teacher and, conversely, what is to be tested becomes important to the student." There is cautious mention of the possibility of making records of the students' pronunciation, but "this is a time-consuming process."

An early experiment with the use of a wire recorder in the classroom was conducted during school year 1946 with a class in fourth semester German at Stephens College. The wire recorder was brought into the classroom once or twice a week. A portable microphone was passed around and each student in turn spoke a few lines. The recording was then played back and errors were discussed. The teacher even had the courage to record the entire period of class work and listen to himself teach. He reported that this was by all odds the most valuable criticism to which one's teaching could be subjected. "I would hesitate," he wrote, "to exchange these experiences for much of the advice offered me throughout the years on the subject of how to teach."

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[2] Whitehouse, Robert S. The Workshop Program: Demonstrating the Value of the Language Laboratory. *The Modern Language Journal*, November 1945.

[3] Johnson, Laura B. The Use of Audio-Visual Aids in Foreign Language Teaching. *The Modern Language Journal*, November 1946.

In the light of subsequent developments in electronic equipment it is noteworthy that the report of the experiment is prefaced as follows:

> Language journals have carried a good many interesting discussions on the use of the phonograph record as an auxiliary device in oral-aural instruction. A little has been said about the use of the mirrophone. However, so few teachers have had access to the latest device, the wire recorder, that almost nothing has been written about it.[4]

The author of the report ventured the prediction that the new device "is destined to invade the high schools and colleges in the near future."

The types of equipment available in 1947 are described briefly in an article entitled, "If You're Buying a Recording Machine." A general checklist of points which should be considered in purchasing equipment is given along with the observation that these machines "are all adaptable in varying degrees to language work, but because most of them are sold as office dictating machines or for use in radio transcription they are built primarily for these purposes."[5]

An indication of the extent to which audio-visual material was being used in foreign language classes 10 years ago can be seen by the results of a survey conducted in the spring of 1948. In that survey, a questionnaire, mainly concerned with the use of instructional phonograph records, was sent to 100 junior colleges in the North Central States. Only 28 responded. Of these, 17 had at least one set of records, and 9 language departments had access to a recording machine. Five of the 9 replied without qualification that significant results had been achieved with recorders in the improvement of pronunciation. Two colleges had had their machines too short a time to be able to evaluate results. Two gave negative answers, one explaining that this was due to lack of time for using such a machine. Several of the replies mentioned the desirability of a special laboratory room, but only a few stated that they had such a room. The instructors making the survey concluded their report with this query: "Is it too bold to suggest that if audio-visual techniques and materials could be improved and prove their worth, that they might cease to be regarded as extraneous, and the laboratory techniques might become as integral a part of the class work as they are in the natural sciences?"[6]

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[4] Scherer, George A. C. Oral Work with the Wire Recorder. *The Modern Language Journal,* May 1947.

[5] Dunkel, Harold B If You're Buying a Recording Machine. *The Modern Language Journal,* May 1947.

[6] Ornstein, Jacob, and Stanley Johnston. The Use of Audio-Visual Material by Foreign Language Classes in Junior Colleges of the North Central States. *The Modern Language Journal,* January 1949.

In the meantime some of the larger universities were beginning to make rather extensive use of audio equipment as a language teaching aid and were installing this equipment in a room other than the classroom. Louisiana State University, for example, applied audio aids to the instructional curriculum of the Germanic and Slavonic Languages Department in 1946, and by the fall of 1947 the Department of Romance Languages was operating under a similar system stressing the aural-oral aspects of the language during the first two semesters. The installation, costing $28,000, consisted of 126 electronic machines, each equipped with headphones and a microphone. In this early postwar period laboratories were established at the University of Texas, Northwestern, Cornell, Yale, Georgetown, Florida, the American Institute for Foreign Trade, and a number of other institutions. An experiment with recording and playback machines at Wayne University in 1948 provided, in addition to 3 class hours, 2 hours per week in the "laboratory" under the direction of a native informant.

The high schools were also becoming interested in the language laboratory, although its function had not been as clearly defined as in the colleges. A committee report on the "Place and Function of Modern Languages in the Public Schools of New York City, 1947" recommended a language laboratory.

> Each school in which foreign languages are taught should have at least one language laboratory for practice, speech analysis, and for serving as a clearing house and repository of audio-visual aids. * * * The educational value of the foreign language laboratory has been amply demonstrated at the various colleges and schools where it has been instituted. This committee feels that the full implementation of its recommended 6-year course would require the use of audio-visual aids as described above.[7]

Greenwich High School, Connecticut, was experimenting with audio-visual material in 1948. Equipment consisted of a set of commercial records and two machines, a record player and a recording machine. The records were played a number of times in class and each lesson was followed by conversation based on the subject matter. Then students whose work justified it were permitted to make their own recordings. Commenting on the value of students' recording, the teacher said,

> Since they can then actually hear how they sound, they are more alert to their mistakes in pronunciation, intonation, etc. and can more easily correct such mistakes by repeated listening and proper study and practice. * * * Such use of student-made recordings should become a common teaching technique

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[7] Newmark, Maxim. *Twentieth Century Modern Language Teaching, Sources and Readings.* New York, The Philosophical Library, 1948, p. 461.

> in language classes now that many practical recording devices—disc, wire, and tape—are available.[8]

In the decade 1948-58 there was increased interest in the use of mechanical and electronic equipment in modern foreign language teaching and the word "laboratory" came into general use. The *Education Index* for June 1955 to May 1957 carried for the first time a classification "Language Laboratories" and listed under this heading 10 articles dealing with instruction in foreign languages. These articles appeared in 7 educational journals.

The laboratory, as it is now, generally consists of mechanical and electronic equipment by means of which the student, individually or in a group, hears and repeats prerecorded material in the foreign language. He may listen with headset and hear his own voice, either simultaneously through the earphones as he speaks into the microphone or by recording on disc or tape and playing back his recording. In this manner he hears himself as others hear him, and he is able to judge and correct his speech by comparing it with the model he is imitating. The laboratory usually has individual semi-soundproof student booths; it may be a separate room or a modernized "electronic classroom."

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[8] Malone, Frances. Record Techniques for Teaching Modern Languages. *Educational Screen*, December 1948.

I. Number, Location, and Growth of the Language Laboratories

According to the survey made during the 1957-58 school year, 240 colleges and universities, distributed among 41 States, the District of Columbia, Hawaii, and Puerto Rico, have laboratories for use in foreign language study. A number of other institutions reported definite plans to establish a laboratory in the near future.

Sixty-four secondary schools in 23 States and the District of Columbia have a language laboratory now in use. Forty-six of these are public high schools, 15 are private, and 3 are university demonstration schools. Some additional schools are using equipment which may develop into a language laboratory.

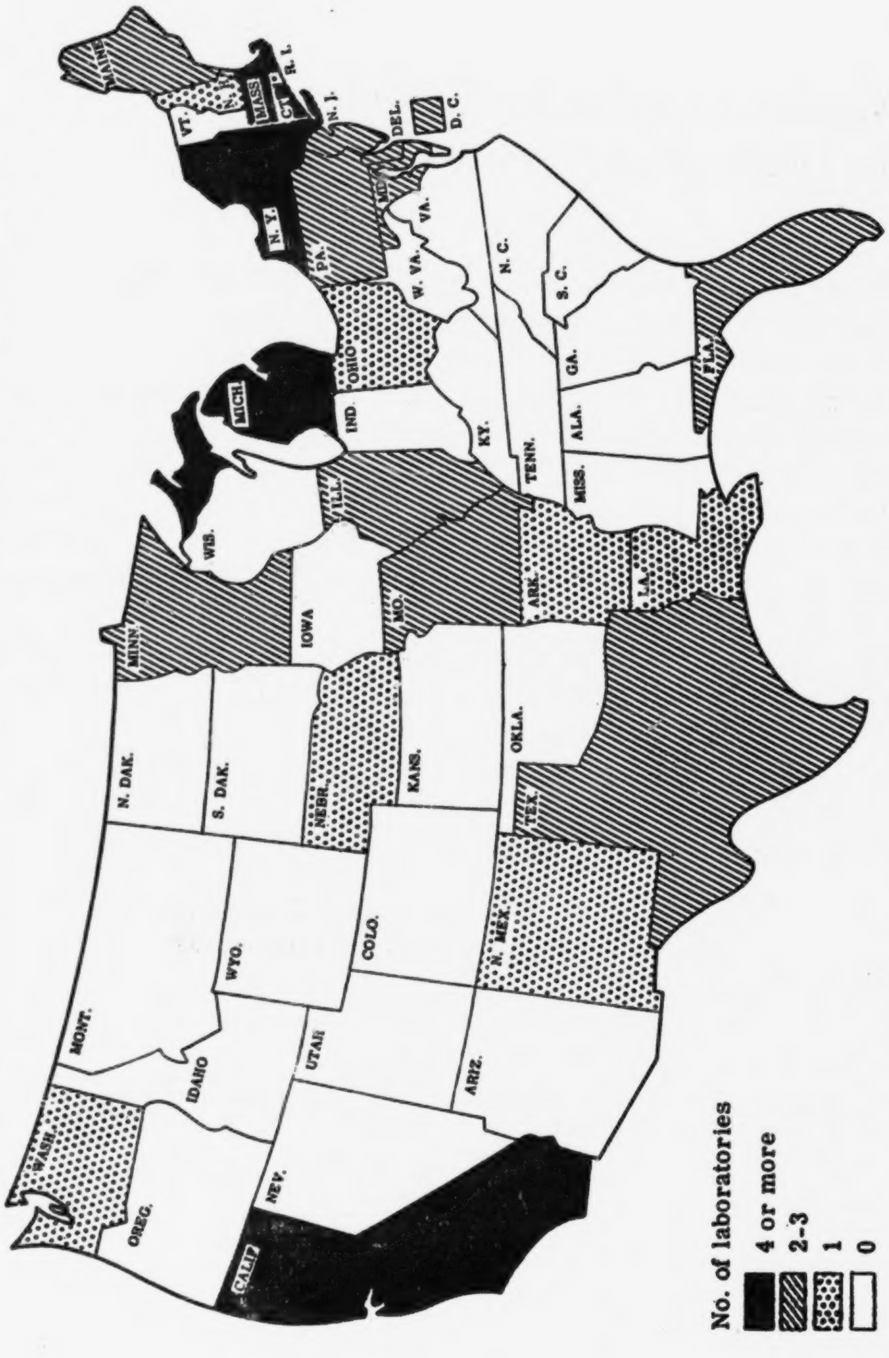
The schools and colleges which have laboratory facilities for language study, together with the languages for which they are used, are listed alphabetically by States in appendix III.

The distribution of the high school and college laboratories by States may be seen from the maps. The regional distribution of laboratories in public and private schools and colleges is shown in table 1.

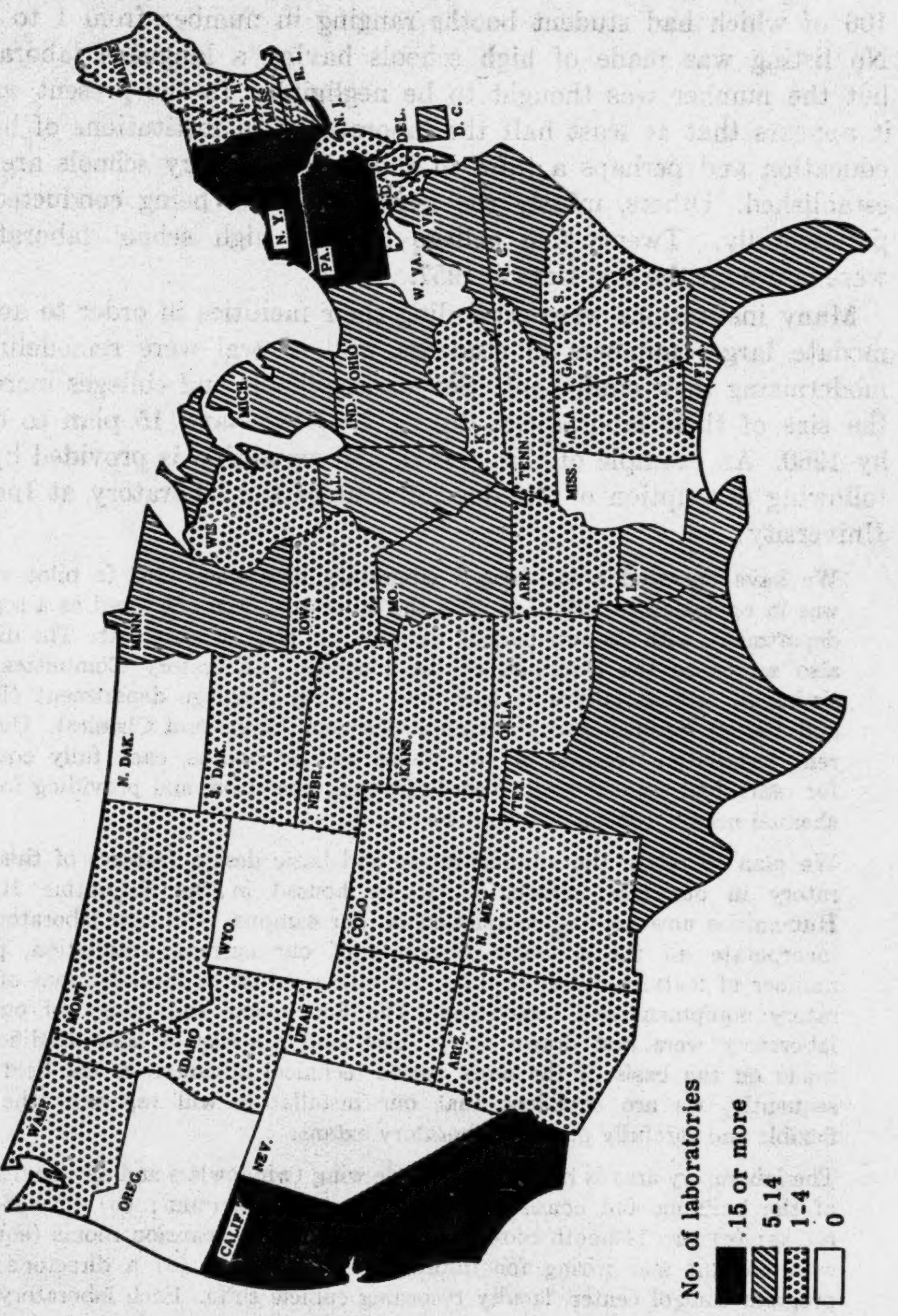
Table 1.—Distribution of language laboratories in public and private schools and colleges, 1957

Region	Number of laboratories in—					
	Secondary schools			Institutions of higher education		Total
	Public	Private	University schools	Public	Private	
1	2	3	4	5	6	7
Northeast	21	7	—	10	64	102
North Central	10	4	2	24	46	86
South	11	2	1	30	30	74
West	4	2	—	25	9	40
Outlying Parts of U.S.	—	—	—	1	1	2
Total	46	15	3	90	150	304

DISTRIBUTION OF HIGH SCHOOL LANGUAGE LABORATORIES BY STATES, 1957


WASH.
OREG.
CALIF.
NEV.
IDAHO
MONT.
WYO.
UTAH
ARIZ.
COLO.
N. MEX.
N. DAK.
S. DAK.
NEBR.
KANS.
OKLA.
TEX.
MINN.
IOWA
MO.
ARK.
LA.
WIS.
ILL.
MICH.
IND.
OHIO
KY.
TENN.
MISS.
ALA.
GA.
FLA.
S. C.
N. C.
VA.
W. VA.
PA.
N. Y.
VT.
N. H.
MAINE
MASS.
CT.
R. I.
N. J.
DEL.
MD.
D. C.
No. of laboratories
4 or more
2-3
1
0

DISTRIBUTION OF COLLEGE LANGUAGE LABORATORIES BY STATES, 1957


MAINE
R. I.
N. J.
DEL.
D. C.
N. Y.
PA.
MD.
VA.
W. VA.
N. C.
S. C.
GA.
FLA.
MICH.
OHIO
IND.
KY.
TENN.
ALA.
MISS.
ILL.
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IOWA
MO.
ARK.
LA.
MINN.
N. DAK.
S. DAK.
NEBR.
KANS.
OKLA.
TEX.
WYO.
COLO.
N. MEX.
MONT.
IDAHO
UTAH
ARIZ.
WASH.
OREG.
NEV.
CALIF.
No. of laboratories
■ 15 or more
▨ 5-14
▒ 1-4
☐ 0

The questionnaire data indicate rapid growth of language laboratories, both in the development of new facilities and in the expansion of existing ones. In the 1955 listing made by The Modern Language Association, 155 institutions reported having language laboratories, 106 of which had student booths ranging in number from 1 to 188.[1] No listing was made of high schools having a language laboratory, but the number was thought to be negligible. In the present survey it appears that at least half the laboratories in institutions of higher education and perhaps a third of those in secondary schools are well established. Others, mostly the newer ones, are being conducted experimentally. Twenty-five college and 13 high school laboratories were in use for the first time in 1957.

Many institutions were expanding their facilities in order to accommodate larger numbers of students, and several were remodeling or modernizing their equipment. Seventeen schools and colleges increased the size of their laboratories during 1957-1958 and 15 plan to do so by 1960. An example of this growth and expansion is provided by the following description of the development of the laboratory at Indiana University:

> We have operated a full-fledged laboratory here since 1953 (a pilot version was in operation in 1952); in 1953 the laboratory was organized as a separate department, with its own budget, director and staff of assistants. The director also serves as the chairman of the Language Laboratory Committee, consisting of representatives of each participating language department (French and Italian, Spanish and Portuguese, German, Slavic and Classics). Our current installation consists of two rooms and 36 booths, each fully equipped for individual student audit-record-playback operation, and providing for five-channel master console-to-booth service.
>
> We plan to retain the administrative and basic design features of this laboratory in our new installation, to be housed in the Ballantine Hall of Humanities now nearing completion on our campus. The new laboratory will incorporate all the desirable elements of our current installation, plus a number of features determined by our rather extensive investigations of laboratory equipment and techniques. The floor plans and design of our new laboratory were first drawn up in 1954, and a series of later modifications made on the basis of the most recent technical advances in the field; consequently, we are confident that our installation will represent the most flexible and carefully planned laboratory extant.
>
> The laboratory area is located in a single wing (windowless and air-conditioned) of the building and consists of: (a) *one* 56-booth room; (b) *two* 36-booth rooms; (c) *two* 14-booth rooms; (d) *two* 30-booth expansion rooms (equipped with conduit and wiring for future expansion); and (e) a director's office, program control center, faculty recording cubicle suite. Each laboratory room operates as a separate unit; or all labs as well as a total of 17 classrooms

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[1] FL BULLETIN NO. 39. *The Language Laboratory*, issued by the staff of the Foreign Language Program of the Modern Language Association of America, 6 Washington Square North, New York 3, N. Y.

in the building may receive program material (tape, disc, mike or radio) from the program control center mentioned in (e), above. All booths are designed with telescoping front and sides in order to make the rooms fully adaptable for film or slide presentation.

Languages Offered in Laboratory Programs

Although the laboratories are most widely used for French, Spanish, and German, laboratory facilities in the colleges and universities were being used during school year 1957-58 for a total of 40 different languages. These are listed below with the number of institutions reporting a laboratory for use in the study of each.

Language	*Number of institutions*	*Language*	*Number of institutions*
Arabic	3	Japanese	4
Burmese	1	Kikongo	1
Chinese	10	Korean	2
Czech	1	Kpelle	1
Danish	1	Latin	8
English as a foreign language	21	Malay	1
French	219	Mano	1
German	170	Norwegian	2
Greek	7	Persian	3
Hakka	1	Polish	3
Hausa	1	Portuguese	16
Hawaiian	1	Rumanian	1
Hebrew	7	Russian	60
Hindi	1	Serbo-Croatian	1
Hindustani	1	Shona	1
Icelandic	1	Spanish	211
Ilocano	1	Swedish	4
Indonesian	2	Thai	2
Irish	1	Tiv	1
Italian	55	Turkish	1

The number of languages varies in some institutions according to the demand. The list in appendix III gives the languages for which the laboratory was used in 1957. In one institution (The Institute of Languages and Linguistics of Georgetown University) 38 languages could be offered, and in another (Hartford Seminary Foundation) tapes and discs are available for 50 languages. The Hartford laboratory is used also by students from other countries who elect the course "Learning English as a Second-Language," and in return for such instruction the nationals of other language areas serve as informants for many of the "unusual" languages.

In the high schools, laboratories are being used for a total of 6 languages:

Language	*Number of schools*
French	44
German	17
Italian	1
Latin	8
Russian	3
Spanish	41

Courtesy, University of New Mexico, Albuquerque.

Effective learning through listening and imitating. (Racks of tapes in background)

II. Purpose of the Language Laboratory

The development of the language laboratory presupposes that learning to speak and understand the language is an important objective of modern foreign language study. Although variously expressed, two assumptions underlie all the statements relating to the laboratory's purpose: (1) that systematic aural-oral practice is indispensable in learning to speak a modern foreign language, and (2) that the conventional classroom does not provide adequately for such practice.

The basic purpose of the language laboratory, therefore, is to provide regular practice in listening to good models of the foreign speech and a large amount of imitation and repetitive oral drill. Listening practice is intended to lead progressively toward the ability to understand the spoken language; that is, conversation at normal speed, newscasts, lectures, movies, plays, group discussions, telephone messages, and other types of standard speech. Oral drill is aimed toward acquisition of the fluent speaking ability needed to express one's thoughts in sustained conversation with pronunciation, intonation, and use of grammatical forms acceptable to the educated native speaker.

A sound curriculum of foreign languages is not characteristically different from that of other subject fields, especially subjects involving complex skills along with broad knowledge and appreciations. It is based on important educational objectives which are possible of attainment; it is suited to the interests and abilities of students at their particular stage of growth; it is sequential and continuous, articulating smoothly with instruction at the lower and higher levels of the school system; it selects method and content in accord with the objectives. But these features of a good instructional program, however firmly subscribed to, are not readily discernible in many foreign language courses, chiefly because so much confusion exists about what language is and how it is learned.

Courses of study and course outlines in modern foreign languages, almost without exception, state the primary objectives somewhat as follows: first, sequential progress toward the acquisition of the four language skills—aural understanding, speaking, reading, writing—and second, a deepening understanding of the foreign culture, of which the language is one element. Student achievement, nevertheless, frequently falls short of popular expectation.

Through the years one of the great problems confronting modern language teachers has been the proper development of aural-oral skills. It may be noted, at least, that some of the obstacles which hindered achievement in the past are today much less formidable. Whereas previous generations of students in the United States felt little actual need to gain a high degree of proficiency in understanding and speaking a foreign language, and therefore were not disposed to spend the long hours of practice necessary to acquire these skills, today there is widespread awareness of the need and an awakened sense of urgency for doing so. For several decades, too, in the high schools particularly, the meager time allotment for foreign languages made the attainment of the fourfold-skill objective impossible; so the greatest emphasis was given to reading. Recently more and more schools are providing an earlier start and a planned sequence of study throughout the high school years. Besides strengthening the offerings in French, Spanish, German, and other languages in the curriculum, serious consideration is being given to the introduction of Russian, Chinese, Arabic, and additional languages now of importance to large numbers of Americans. And college language departments, while in no way limiting their traditional concern with literary scholarship and linguistic research, are becoming more actively occupied with teaching problems and the attainments of the rank and file of nonlanguage majors who come under their tutelage.

These and other trends reflecting the changing times are causing the whole language teaching profession to turn the searchlight upon itself and to redouble its efforts to give balanced attention to the several objectives of language study. In a majority of institutions the problem revolves about the question of how the aural-oral objectives can be given attention commensurate with the attention given other objectives. Increasingly, as knowledge of linguistic science is more widely disseminated and results of experimental programs are made known, language departments are concluding that some thoroughgoing reorganization of courses is called for. The typical instructional situation prior to use of language laboratory techniques has been described as follows:

> Usually, the elementary course consists of the complete survey of grammar plus a modest amount of reading in an elementary text, while the intermediate course is a review of grammar with more details plus the reading of one-hundred and fifty to two-hundred pages in an intermediate text. * * * It would be inaccurate to say that no attention is given to oral-aural practice, but

> attention to the aural-oral aspect is not planned. A definite amount of grammar is covered, a definite amount of translation (composition on a model) is done, a definite amount of reading material is covered, and the rest of the time—if there is any—is devoted to dictation or questions and answers in the second language, or pronunciation practice. The decision to institute a new course was made not because of dissatisfaction with the positive accomplishments of the traditional course, but because there was an obvious need for a course which would include a planned approach to the attainment of an oral-aural objective.[1]

Likewise in the secondary schools, teachers, administrators, parents, curriculum directors, and all concerned with the improvement of modern language instruction are questioning the suitability of a grammar-translation approach and a decoding process in reading. Given more time for language study and greater determination to reach a useful level of competency, how can the student be assured of maximum achievement?

Teachers and scholars versed in linguistic science and the psychological bases of learning have done much to clarify certain concepts which are fundamental to the effective study of a modern foreign language. Most frequently expressed or implied in discussions of the language laboratory are the following:

1. The foreign language program, at whatever level of the school system, must recognize that language is speech. The written form comes later, considerably later in the natural progression of language learning, which is first hearing and speaking and then reading and writing. Instead of starting with the book and saying, "Let's see how these words are pronounced," the teacher eventually suggests, "Let's see how these sounds are represented in writing."

2. The most difficult skill to acquire is near-native comprehension of the spoken language. Much listening practice is therefore essential both in initial and succeeding stages of language learning.

3. Although the older student is analytical and needs some rules to help systematize his learning, the most important activity is organized oral drill on the significant patterns of sound and structure. To perceive through grammar study how the language works is useful, but does not take the place of practice in the actual doing—no more that learning tennis rules can substitute for exercise on the court with racket and ball.

4. Language skill, like any skill, requires the careful development of habits of automatic, almost unconscious, performance of highly

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[1] Brushwood, John S., and Paul C. Polmantier. *The Effectiveness of the Audio-Laboratory in Elementary Modern Language Courses.* The University of Missouri Bulletin, General Series 1953, Number 14, p. 2.

Courtesy, University of California, Riverside.

Study hour for language students.

complicated physical and mental processes. This means regularly scheduled short periods of well-motivated drill in which mimicry, repetition, and recall go hand in hand with efforts at self-expression in real communication situations.

5. In order to acquire the second language as a coordinate system, not a compound or admixture of foreign elements and the mother tongue, the learner must think and react *in the foreign language.* The young child assimilates speech patterns with amazing rapidity because he learns the language as behavior and responds to utterances which get their meaning in a behavioral setting. The older student's tendency to translate to and from English is circumvented when meaning is gained directly and at normal tempo through actions, natural situations, pictures, contextual inference, and contacts with native speakers. (Translation or interpreting, which is the relating of two languages already known, may be acquired as a separate art by advanced students.)

6. Control of the language is basic to an understanding of the foreign culture as well as to direct communication through speech and writing. Since the language is itself an integral part of the culture, the student who enters into an unfamiliar thought process, responding in foreign terms to foreign stimuli, crosses the boundary of his monolingual world into a new world of different tradition. He realizes that language is more than a means of expression, that it also governs and shapes thought, since its structure and vocabulary constitute the framework within which ideas are formed and symbolized. In sharing the same thought processes, persons who speak and read the other fellow's language come to understand how he thinks, how he sees relationships, and how he interprets experiences. Thus when the language is learned as a system complete in itself, with meaning independent of the student's mother tongue, language skills and cultural understanding are inseparable and develop together. The insight gained through experience in the language is unique and goes far beyond the factual information about a culture which can be acquired in other ways.

The role of the language laboratory in the instructional program will become increasingly clear as students, along with their teachers, grasp the significance of these concepts. Obviously the use of audio tools would not be necessary if the students lived in the foreign environment and had unlimited access to native speakers of the language or if a tutor or drill master could work individually with each student throughout the study hour. Under usual classroom conditions, however, the use of discs or tapes increases both the quantity and the quality of the students' aural-oral experience in the language. Such practice, in effect, can extend the presence of the teacher or the native speaker almost indefinitely. In planning the most effective use of their time, students must distinguish sharply between learning *about* the language and learning the language.

Courtesy, Wayne State University, Detroit, Mich.

How do I sound?

III. Organization and Administration of the Language Laboratory

There are basically two types of laboratory installations. The first comprises one or more centrally controlled recording and playback machines from which the sound is wired to each student position. If there are several machines, the student has a choice of channels to which he may listen. The second type contains in each booth a recorder-player controlled by the student himself. Both types of installation are found in the institutions covered by the survey, although the majority have a central control panel rather than individual recorders in each booth. Some laboratories combine the two types of installation.

Plans of Organization

The language laboratory has as many variations in organization as there are different conditions affecting the language program, such as the space available, size of the budget, number of languages taught, number of courses offered, number of students enrolled, and whether group or individual study or both may be preferred. Sometimes the organization is deliberately chosen as the type best suited to the language department's needs; in other cases the laboratory organization is but a temporary expedient or preliminary step in the development of the kind of complete laboratory envisioned. (See appendix I for a sample description of basic design and possible functions of a language laboratory.) Laboratories are organized according to one or more of the following plans, with wide ranges in size and in amount of equipment.

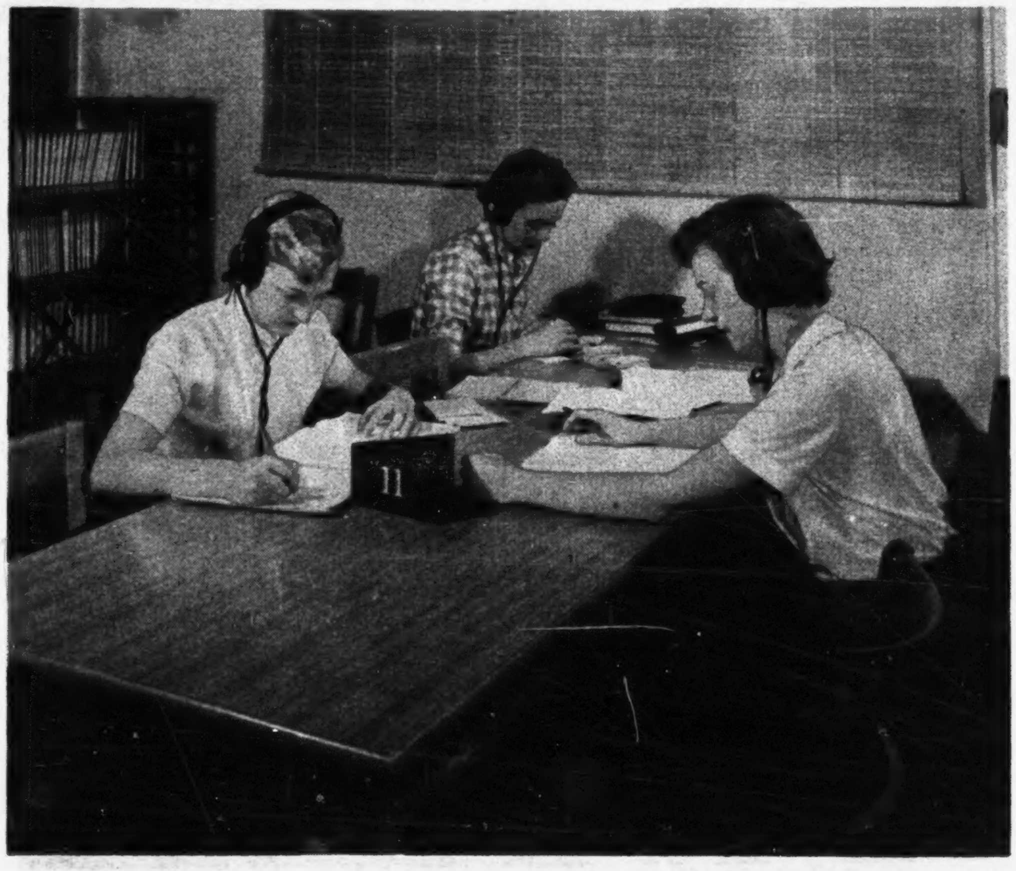
1. *The lab-classroom.*—The regular language classroom is equipped, with or without booths, so that audio-visual aids are accessible to students during the class hour or supervised study time. Each student position has a headset and individual volume control. The tape re-

Courtesy, Pershing High School, Detroit, Mich.

The regular classroom is used as a laboratory.

corder, microphone, and phonograph are located in front for the teacher's convenience. Sometimes a movie projector, with patch cord connection to the headsets, screen, and dark curtains are available for the showing of foreign language films. This self-contained electronic classroom serves for all kinds of language activity, avoids scheduling difficulties inherent in the high school program, and allows the teacher full scope in the integration of aural-oral-reading-writing work. In schools having all language rooms electronically equipped, audio materials may be used for part of the class work each day. If there is only one such room, a particular class is scheduled to use the room on certain days and then it devotes the entire period to laboratory work.

2. *The listening room.*—Located in the library or other available space, the listening room may be provided in addition to the practice laboratory or as a first step in establishing a full laboratory with recording facilities. In one school a listening room was set up with old science laboratory tables at which jacks provided 44 listening posts. If the listening room is in the library, students obtain tapes in



Courtesy, Stanford University, Stanford, Calif.

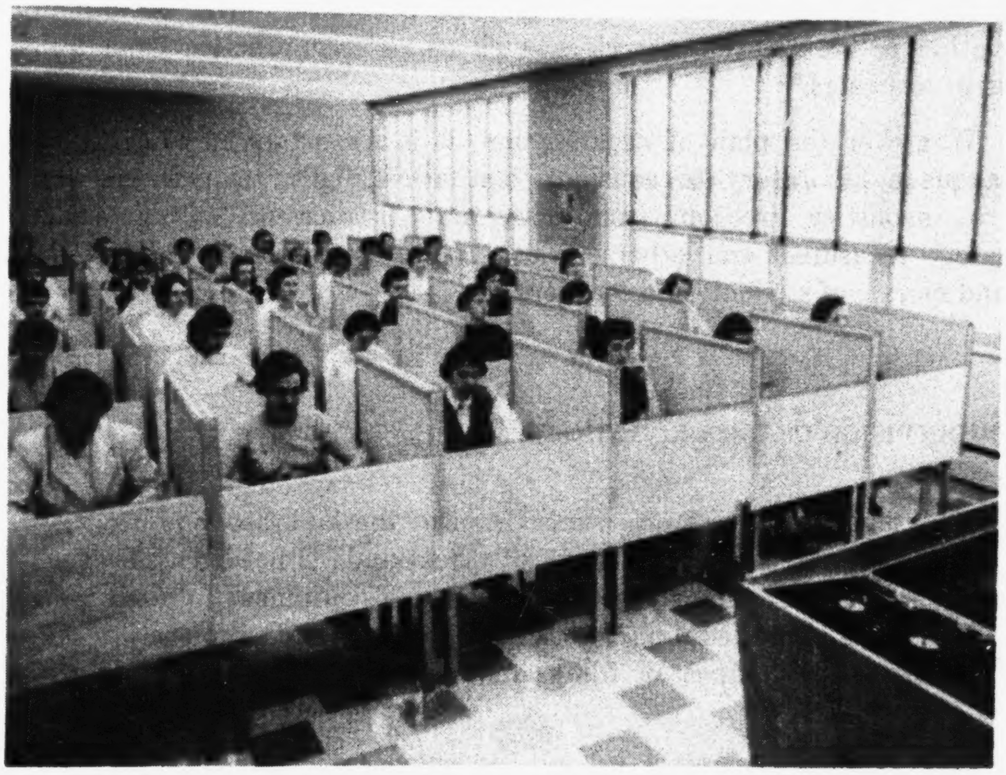
The library reading room is equipped for listening.

the same way that they check out books, and by using earphones they listen without disturbing others in the reading room.

A variation of the listening room is, in effect, a lounge or club room where students may relax and hear recorded programs of a recreational nature in the foreign language. They may hear the foreign language by shortwave radio, listen to stories, poetry, dramatic transcriptions, music, lectures, and a variety of recorded literature not directly a part of their classwork. Sometimes such a room is used for language club meetings, singsongs, play rehearsals, practice of choral reading, and the like.

3. *The practice laboratory.*—This is a separate room, not a classroom, which serves primarily as a place where students may carry out homework assignments, drill, review, take listening comprehension tests, prepare or record oral compositions, and pursue individual projects in using the spoken language. It may be used both by classes and by individuals. The operation of one such laboratory, which has an elaborate control panel with 13 channels, has been described as completely flexible:

> Without leaving the control area, the monitors maintain a close personal check on each student. Either monitor may listen through phones or speaker



Courtesy, Immaculata College, Immaculata, Pa.

Five languages can be broadcast simultaneously from a master control.

> to any student (without the student knowing it); he may speak to the student, overriding the lesson with correction or advice; if he has a group of students scattered through the room working on one lesson, he can speak to them all at once. He can send the student's lesson and voice to any or all of the other booths, or he can cut in a tape recorder and make a recording of one student's performance. Thus he can teach individuals in isolation, groups of any size, or whole classes, while others working on something else are quite undisturbed. And every student in every booth hears in his earphones the sound of his own voice as he speaks. Individual tapes can also be used in the booths, though as things have worked out, they serve mainly for periodic testing.[1]

4. *The mobile laboratory.*—Large, specially equipped tables with the mechanical and electronic devices built in or mounted on them may be wheeled into the classroom or wherever needed. This arrangement avoids the inconvenience of moving classes from one room to another and is more efficient than carrying individual portable machines in schools where the equipment is shared by several groups.

5. *The drill room.*—Rooms accommodating small groups and having seats without arms, so that reading and writing are eliminated, are equipped with a wide range loudspeaker fed from a central control room. From the control room, which may be located in another part of the building, are sent recorded materials, live voice, or radio programs. The drill rooms are used for *viva voce* group drills on pronunciation or substitution exercises, such as pattern practice from filmstrip drawings.[2]

Whatever the plan of organization, it is important in locating the language laboratory to consider ventilation, light, temperature control, acoustics, freedom from noise and distractions, storage space, safety measures, and other physical features affecting the efficiency and morale of students and teachers.

Supervision of the Laboratory

It is obvious that careful supervision of the laboratory is necessary for optimum results. Supervision of three kinds is needed: (1) Technical, for making minor repairs and keeping equipment in good order, (2) clerical, for scheduling, checking attendance, keeping the lab open regularly, issuing tapes, or filing, and (3) professional, for monitoring the students' practice, conducting drill sessions, preparing tapes, and for other instructional activities.

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[1] Lloyd, Donald J. Language in a Living Environment, *Audio-Visual Instruction,* February 1958.

[2] See, for example, Listening Booth or Drill Room? by Ernest F. Haden *and* A Film Strip for Pattern Drill, by Patricia O'Connor in *Language Learning,* Vol. V, Nos. 1 and 2, 1953-54.

The language laboratories, according to the survey, are administered in various ways. Six institutions of higher education have full-time laboratory directors and four have full-time technicians in charge of the laboratory. One has a half-time technician and one a technical director assisted by native speakers. The majority (172) are directed by members of the instructional staff, 128 of whom also carry full-time teaching assignments. On the average, those directors who have a reduced teaching schedule carry 75 percent of the usual class load, although reductions vary from 10 to 90 percent in different institutions. One institution reduces the teaching schedule by 25 percent for teachers who prepare tapes. In another, where there is no reduction in teaching schedule, the laboratory director is compensated by additional salary.

Six of the questionnaires gave no information about the administration of the laboratory. The 23 laboratories which have no director are managed mostly by teachers on a cooperative basis, each taking responsibility for the supervision of his own classes. That is, each

Courtesy, Tulane University, New Orleans, La.

Graduate assistants monitor two separate language groups.

teacher is his own lab director. This pattern varies, however. Three laboratories are managed by graduate assistants in the language department, one by a teaching assistant, and three by students working under teacher supervision.

In the secondary schools, the laboratory is used more often by classes or by groups than by individuals. Only one high school has a full-time laboratory director. In most of the 47 reporting, the laboratory director is an instructor who has a full-time teaching schedule in addition. Only four have a reduced schedule, the reduction ranging from 16 to 50 percent with a median of 25 percent.

Scheduling the Use of the Laboratory

The laboratory may be used for group practice or individual practice or both. Sometimes classes are scheduled to meet at fixed periods in the laboratory, a practice which prevails in 92 colleges and 19 high schools. More generally, however, the laboratory is attended by students who work individually, either on an optional basis or according to some prearranged schedule.

The frequency and length of laboratory practice periods have evolved through the trial and error method in many institutions. The limitations of laboratory facilities as well as pedagogical theory have of course influenced the scheduling policies. The following sampling of experience and opinion seems representative:

> Through experience it has been found that most students should not work more than 30 minutes each session with recordings. After 30 minutes of intensive listening and mimicry a point of diminishing returns is attained. It is best to have the student report to the laboratory at designated times of his own choosing a minimum of 4 half-hours per week on separate days.
>
> Students attend lab on a required basis twice a week for a half hour each time. They may spend as much additional time in the lab as they need, and many use it more than the minimum required time.
>
> If a laboratory is to make its best possible contribution, it must be a full part of the course and must be required for all students. I know this is often not the case—for budgetary and administrative reasons usually—but it should be the goal if the laboratory is to be more than a mere remedial service or a kind of fifth wheel. Otherwise, the competition for students' time leaves scant leisure for voluntary attendance.
>
> One classroom hour of every 3 in the elementary and intermediate courses is spent in the laboratory and students sign up for 2 extra hours per week for laboratory preparation. Students are privileged to go to the laboratory in their free time. The tapes and equipment are all at their disposal.

> The beginning and intermediate language classes meet 5 times a week, with classroom meetings on Monday, Wednesday, Friday and laboratory sessions on Tuesday and Thursday. Laboratory sessions are supervised by the instructors, but it is planned to give the laboratory assistant complete charge of these periods.

One laboratory director explains the details of scheduling as follows:

> a. *Half-hour periods.* Our students are required to attend lab for 3 half-hour periods per week. These must be scheduled on 3 different days. Attendance is recorded and reported to individual instructors. (We feel that hour-long periods are too long for efficiency.)
>
> b. *Complete scheduling freedom.* By using a central-control, individual booth selector-switch system, we are able to accommodate any student at any period in any booth.
>
> c. *Full use of facilities.* By taking advantage of these two features (a. and b.) we are able to keep our lab operating to its full capacity practically all the time. With 40 booths we accommodate over 400 students a day. We have 650 students who come to the lab for 3 periods a week. They are distributed among 9 courses. Our lab operates from 9 a.m. until 3 p.m. 5 days a week.

A small college which has only 8 student booths is able to accommodate all of its 550 language students for a period of 1 half-hour per week and reports that many students spend additional time in the laboratory. Additional periods will be assigned for everybody as soon as more space is available.

The survey showed that in 134 colleges and 15 high schools students are required to spend a specific number of hours in the language laboratory each week. In scheduling the hours for laboratory practice some institutions permit students to do their laboratory work whenever they have free time. Others keep a record of attendance according to a definite assignment of time. In 76 colleges and 18 high schools students are encouraged, but not required, to use the laboratory individually. Although avoiding a laboratory requirement, some of the language courses are so planned that students must practice regularly in the laboratory in order to make satisfactory progress in their classwork.

Many institutions use more than one of these methods of scheduling. The beginning students, for example, may be required to use the laboratory, while the intermediate and advanced students attend on a voluntary basis. Or, certain classes, such as those in conversation or phonetics, may meet as a group in the laboratory, while students of other classes attend as individuals according to arrangements made by their instructors or at the students' option. The size of the laboratory and the amount of equipment, more than other considerations, influence some of the policies.

One semester's use of a college language laboratory, showing attendance by classes and additional voluntary participation by individuals, is illustrated in table 2. Each unit in the table represents one student spending one hour in the laboratory. For the regularly scheduled attendance *by class* the same unit value applies, assuming a conservative average of 20 students per section.

Table 2.—Student attendance in one college language laboratory

Hours	Language					Total
	French	German	Spanish	Slavic	Others	
1	2	3	4	5	6	7
Scheduled student	3,640	2,240	1,800	400	50	8,130
Voluntary student	656	464	184	30	11	1,345
Total	4,296	2,704	1,984	430	61	9,475

Most of the language laboratories are used by all language students. Of the 214 college and university laboratories reporting classification of students using the lab, 210 are used by beginning students, 187 by intermediate students, and 157 by advanced students. Of the 41 high school laboratories reporting student classification, 38 are used by beginning students, 38 by intermediate students, and 29 by advanced students. The variations in practice are indicated by the following summary of replies:

Table 3.—Classification of students using the language laboratory

Language class	Number of laboratories	
	College	High school
Beginning, intermediate, and advanced	148	27
Beginning and intermediate only	35	9
Beginning only	19	2
Beginning and advanced only	8	—
Intermediate only	3	1
Intermediate and advanced only	1	1
Advanced only	—	1

IV. Equipment and Costs

Language laboratories vary greatly both in size and in amount of equipment. Some have few student booths or none; some are elaborately equipped installations consisting sometimes of 2 or 3 separate laboratories. An indication of their size is shown in table 4, summarizing reports obtained from 169 colleges and universities and 40 high schools.

Table 4.—Size of language laboratories

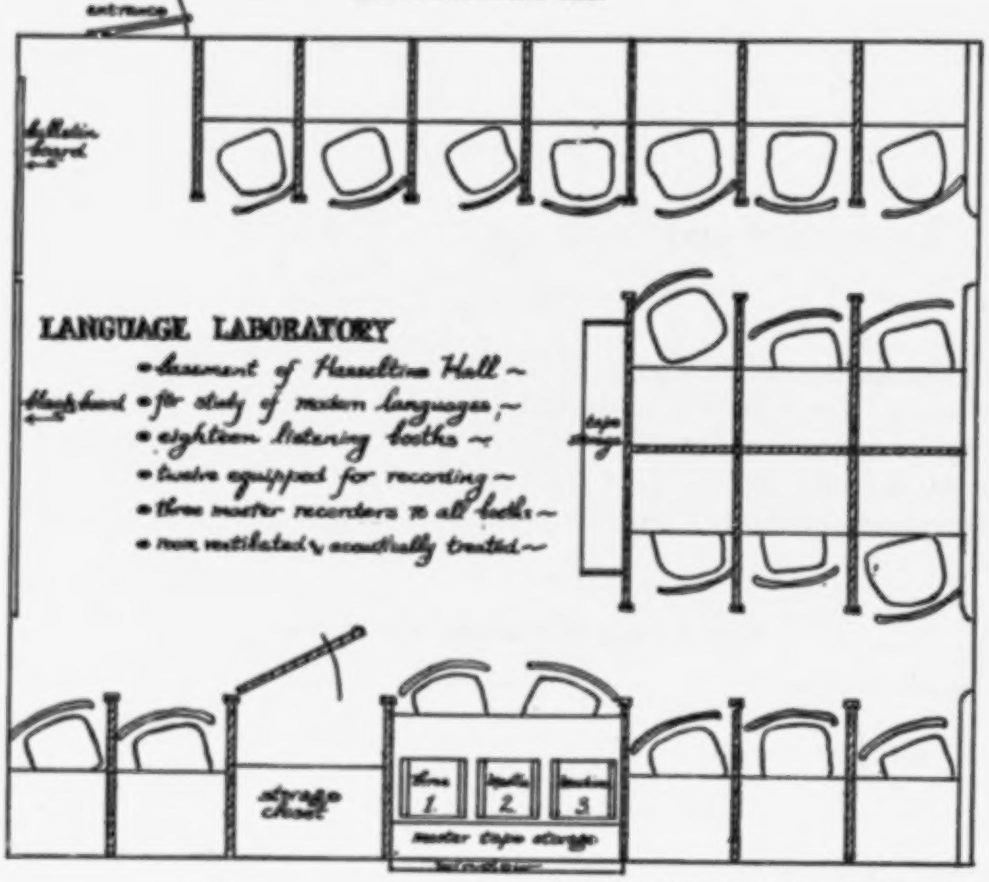
Number of booths	Number in—	
	Colleges and universities (169 reporting)	High schools (40 reporting)
No booths—headsets only	12	15
Less than 10 booths	39	10
10 to 19 booths	43	9
20 to 29 booths	24	3
30 to 39 booths	19	2
40 to 49 booths	9	0
50 to 99 booths	16	1
100 to 362 booths	7*	0

* Duke, University of Miami, Georgetown, Franklin and Marshall, University of Florida, University of Michigan, Louisiana State.

Types of Equipment

Various combinations of the following types of equipment are found in language laboratories: Tape recorders (single track and dual track), tape playback machines, wire recorders, magnetic disc recorders, turntables with amplifiers, phonographs, headsets, microphones, film and slide projectors, projection screens, shortwave radios, and television sets. The type of electronic equipment used in many laboratories is still in the developmental stage, but is constantly being improved.

SAMPLE LABORATORY PLAN


entrance
bulletin board
LANGUAGE LABORATORY
• basement of Haseltine Hall ~
• for study of modern languages; ~
• eighteen listening booths ~
• twelve equipped for recording ~
• three master recorders to all booths ~
• room ventilated & acoustically treated ~
blackboard
storage closet
1
2
3
master tape storage

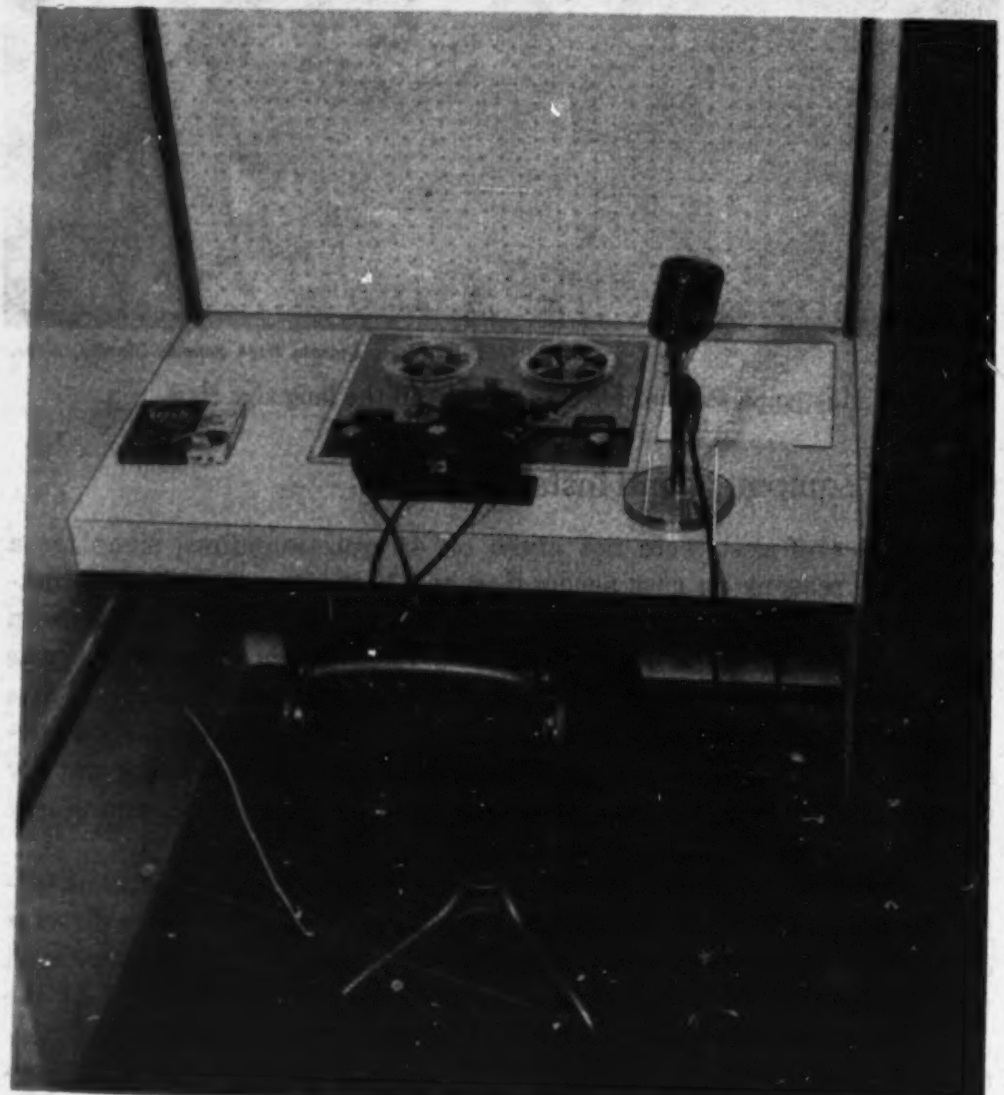
Courtesy of Bradford Junior College

Both magnetic tape recorders and magnetic disc recorders are in use. Of the 196 institutions of higher education which listed their equipment, 190 use tape recorders and 61 use magnetic disc recorders; 135 have tape recorders only, 6 are using magnetic disc recorders exclusively, and 55 have both tape and disc recorders. Of the 36 secondary schools which listed their equipment, 34 have tape recorders and 10 have magnetic disc recorders; 26 use tape recorders exclusively, 2 use magnetic disc recorders exclusively, and 8 have both tape and disc recorders. No separate listing was made of equipment used only for making master recordings.

Most of the college and university laboratories and 24 of the high schools also have a phonograph, but in all cases this is in addition to some other kind of equipment. Before acquiring tape and disc recording and playback equipment many teachers used the phonograph for listening practice.

In 12 college language laboratories the room is furnished with long tables wired for headsets and no booths are provided. Five other laboratories have tables wired for headsets but in addition have some individual booths. Fifty-five laboratories have a given number of booths equipped in one way and additional ones equipped in another way. Fifteen high schools have headsets only, with no booths, and five schools have more than one type of booth. The equipment used in booths, as shown by the questionnaire replies, may be listed as follows:

Booth equipment	*Number of laboratories*	
	College	*High school*
Headset only	60	20
Headset and microphone	19	3
Headset, mike and recorder	95	17
One of the above plus a selector switch	49	4



Courtesy, Stanford University, Stanford, Calif.

An individual student booth in the language laboratory.

Courtesy, Lincoln High School, Lincoln, Nebr.

Listening stations for each student in the language class.

Costs of Equipment and Installation

Estimates of cost were not given on 45 questionnaires, since for a variety of reasons no cost accounting had been done and the information was not available. Since in some cases the equipment had been pieced together over a period of years from various sources, it was impossible to figure costs in any meaningful way. Complications which add to the difficulty of estimating costs are (1) sharing responsibility for the laboratory operation, (2) servicing of equipment by staff members without compensation, and (3) purchasing equipment and parts at a discount.

One director, replying that no accurate record had been kept, remarked, "But whatever the costs are, they are worth it." The director of one college laboratory, a former commercial radio operator and radar officer, does his own maintenance work, while members of the physics and engineering departments perform major repairs or installations. In that laboratory, therefore, the only cost apart from the purchase price of the equipment has been for extra parts or replacements.

One of the high schools, which estimated a total cost of $230 for the laboratory, commented:

> One of our science teachers with a very fine knowledge of electronics put the whole thing together with equipment the school already had or obtained at a reduction and is able to maintain perfect operation of the lab at almost no cost.

Two other schools reported "minimal" cost; 9 stated that so far there had been no maintenance expense, since the equipment was new; and one gave the expense as "negligible for the first year of operation, but increasing." One school is renting the laboratory equipment for $95 a month with the option of buying it at the end of the school year.

The information pertaining to cost obtained from the survey may be summarized as follows:

Table 5.—Costs of language laboratory equipment and installation

Number	Cost range	Median	Average	Total
1	2	3	4	5
For 91 colleges	$250[1] to $45,000	$4,300	$6,579	$598,691
For 27 high schools	$230[2] to $13,000	$ 800	$2,331	$ 62,945

[1] One tape recorder, one phonograph, no booths.

[2] One tape recorder, one phonograph, 8 headsets, cabinet on rollers to hold equipment and materials.

The range of costs for equipment and installation in the 91 institutions of higher education and the 27 secondary schools is shown in the following:

Colleges and universities

Number	*Total cost*
15	Under $1,000
39	$ 1,000 - $ 5,000
22	$ 5,000 - $10,000
8	$10,000 - $15,000
0	$15,000 - $20,000
3	$20,000 - $30,000
4	Over $30,000

Secondary schools

Number	*Total cost*
6	Under $500
7	$ 500 - $ 1,000
5	$ 1,000 - $ 2,000
6	$ 2,000 - $ 5,000
1	$ 5,000 - $10,000
2	Over $10,000

Many of the questionnaires were incomplete as to average unit cost of individual items of equipment, and extreme ranges in costs for the same item were reported. The following table shows averages:

Table 6.—Average unit costs of equipment in language laboratories

Item	College and university			Secondary schools		
	Number	Median unit cost	Average unit cost	Number	Median unit cost	Average unit cost
1	2	3	4	5	6	7
Tape recorders:						
Single track	109	$195	$226	19	$180	$209
Dual track	81	225	253	8	172	165
Magnetic disc recorders	45	295	291	8	177	192
Phonographs	129	75	90	21	100	104
Student booths with:						
Headset only	38	35	56	4	14	84
Headset and mike	7	60	116	2	70	70
Headset, mike, and recorder	47	200	228	7	166	213
One of the above plus a selector switch	13	50	151	3	10	37

One university, one small college, and two high schools furnished a detailed account of their equipment. Since specific examples are more useful than generalizations, these lists are included here.

Complete cost of a sample university laboratory

Item of equipment	*Number*	*Cost*
Dual track tape recorders	3	$ 645.00
Magnetic disc recorder	1	295.00
Phonographs	3	179.92
Headsets, mike, disc recorder, selector switch	20	6,900.00
Master control console with 7 amplifiers, 6 tape drive mechanisms, inputs for simultaneous piping of magnetic tape, discs, phonograph records, radio or voice programs to a maximum of 120 booths via each of 6 channels	1	1,570.00
Monitoring jacks to permit instructor to monitor students' recording or play-back in up to 6 booths from position in aisle	4	250.00
16mm sound movie projector	1	400.00
Opaque projector	1	235.00
Film strip projector	1	80.00
Automatic 2" × 2" slide projector	1	69.96
Wall screen	1	23.92
16mm sound movies, 6 French, 3 Spanish	9	638.93
Film strips, 2 French, 2 Spanish, 1 German	5	87.75
Sets instructional color slides	2	78.75
Sets wall charts	3	7.50
Records and pre-recorded tapes		1,100.00
Re-usable magnetic tape and discs		511.74
Plastic reels w/ file boxes		26.88
Tools, meters, etc.		78.12
Disc player for instructor's use in correction	1	69.96
Total		$13,248.43

This university laboratory is used by 150 language students on a required basis and by others on a voluntary basis. With the exception of the central control and monitoring provisions, all the above A-V equipment is frequently used in classrooms as well as in the laboratory. The director pointed out that the record collection was begun more than 30 years ago.

Equipment inventory of a small college laboratory

	Unit price	*Total cost*
26 2-channel recorders (including 2 spares)	$263.60	$6,853.60
25 microphones (including 1 spare)	13.43	335.75
25 headsets (including 1 spare)	8.00	200.00
1 student booth kit (for use as model)	70.00	70.00
23 student booths (built by college)	35.00	805.00
1 record-player (turntable, base, 2-needle cartridge)	50.30	50.30
1 sound corner speaker system	59.50	59.50
1 bulk tape eraser	45.00	45.00
1 recording-head demagnetizer	7.40	7.40
2 switchboards (including 1 for source of spare parts) (Army surplus)	30.00	60.00
Miscellaneous wire, switch boxes and electronic equipment acquired from U.S. Army Surplus stocks at nominal cost		
3 tape playback machines, with amplifiers	84.45	253.35
Total		$8,739.90

Additional Equipment

Splicing machines, splicing tape, tools, etc.

Three portable tape recorders for use in making master tapes, and for classroom work.

Cost of a high school language laboratory

	Cost	
1. *Items in general contract*		
1 recording booth	$350.00	
6 permanent listening stations	250.00	
9 feet of wood storage cabinets lower and upper and counter top	500.00	
Special electrical installations, including electric plug mould, extra electric outlets, ceiling microphone, wall speaker, etc.	400.00	
		$1,500.00

Note: All the above work, which was included in general contract, has been estimated only. Normal classroom complement of chalk, cork, and pegboards not included here.

2. *Furniture*		
12 movable booths at $74.00 each	888.00	
1 table	47.70	
20 chairs at $7.07	141.40	
		$1,077.10

3. *Special equipment*

1 screen	21.45	
20 sets of earphones	140.00	
1 amplifier	295.00	
4 tape recorders at $139.50 (for class or lab)	558.00	
1 magnetic disc recorder	295.00	
1 master tape recorder and speaker (for lab only)	694.00	
5 record players at $54.50 each (for class or lab)	272.50	
Special wiring for installation of booths and connecting of above equipment	400.50	
		$2,676.45
Total		$5,253.55

This laboratory is the size of a regular classroom and is used by the departments of English, dramatics, and speech, as well as by students of Spanish, French, and German.

Cost of a high school lab-classroom without booths

Item	*Cost*
4 rows of tables wired with 30 boxes with individual volume control to which are attached headsets	$264.00
30 boxes with individual volume control	63.00
30 jacks	32.50
30 headsets	82.50
1 tape recorder	230.00
1 tape recorder with mini-mix attachment	240.00
1 phonograph	65.00
Total	$977.00

Maintenance Cost

	Range	Median cost	Average cost	Total cost
For 137 colleges	0 – $3,000	$100	$212.75	$29,146
For 19 high schools	0 – 300	40	67.10	1,205

An example of maintenance expenses may be cited from additional information attached to one of the questionnaires from a laboratory being used by 140 language students. Estimated cost per year, without depreciation, for service and parts, amounted to $317.70 in the first year of operation The itemized listing is as follows:

Sample of maintenance costs

Item	*Number*	*Cost*
Tapes	3	$ 8.40
Needles and postage, at $1.25	23	28.77
Discs and postage, at $0.95	100	95.31
Needles, at $1.25	9	11.25
Discs at $0.95 plus postage	100	95.39
Complete headset	1	10.00
Ear tips, at 2/25 cents	6	.75
Tape splicer, plus postage	1	4.93
Mending tape, at $0.40	2	.80
Needles, at $1.25	18	22.50
Large spools	2	1.20
Large reels, magnetic tape	8	22.40
Repair service charges		16.00
Total		$317.70

In addition to the above total, the faculty made personal purchases for the laboratory amounting to $200.

Cost Per Student Hour of Use

Only 38 of the institutions of higher education and 5 of the secondary schools estimated the cost of the language laboratory in terms of cost per student hour of use. Some replied that it was impossible to estimate this figure, and several of the newer laboratories indicated that it was too early to tell what the cost would be. The 38 estimates from colleges ranged from 3 cents per student hour to 80 cents, with both an average and a median of 21 cents. The 5 estimates from high schools ranged from 2½ cents to 46 cents per student hour of use, with an average of 16 cents and a median of 5 cents. The director of one of the larger laboratories, having an attendance of 200 student hours per day, stated that his estimate of 30 cents per student hour was fairly accurate. This estimate included the director's salary as one-fourth of the cost, equipment amortized over a 10-year period, service, parts, and materials.

Most of these figures are not comparable, however, because of the variation in items included in the estimates. Many did not include salaries, for example. One of the college laboratory directors commented as follows:

> Since lab classes are conducted by the regular instructor as part of, or over and beyond, his normal teaching load, there has been no instructional salary

directly chargeable to laboratory operations other than that of a student technician who is paid at an hourly rate. In 1955-56 maintenance, service and parts cost approximately 5 cents per hour for 2,050 hours of operation. In 1956-57, the cost was approximately 3½ cents per hour for 3,610 hours of operation despite higher replacement factors. These figures disregard the fact that we play host to between 500 and 600 visitors annually (high school classes, teacher organizations, etc.), each of whom spends an average of one hour in the laboratory. Nor do they consider voluntary use of the laboratory by students in language classes where laboratory attendance is not required.

Student Fees

Only 46 colleges and universities reported any charge to the students for use of the laboratory. With the exception of the Yale Institute for Far Eastern Studies, which has a laboratory fee of $30 per semester, the student fees range from 50 cents to $10 per semester, with an average of $5.

Only 4 high schools, all private, have a student fee. Their fees per semester are 50 cents, $1, $2.50, and $7.50 respectively.

V. Materials and Techniques for the Language Laboratory

Modern foreign language teachers have long been aware that in the usual classroom it is seldom possible to develop in students any high degree of aural-oral facility. Class size and time limitations prevent the necessary individual practice. For this reason students and teachers alike have eagerly accepted the laboratory as a means of providing the drill which is essential for fluency in speaking.

Establishing a laboratory, however, is only the initial step. The finest equipment cannot of itself guarantee satisfactory achievement. One director likened the laboratory to a typing room: buying the typewriters, indispensable as they are, does not insure that the students will use a touch system instead of the hunt-and-peck nor that their practice will result in the greatest possible progress toward speed and accuracy. As in all other instructional situations, the key to success in the laboratory is the teacher. "Machines can repeat experiences as often as is necessary. But it is only the teacher who can create the experience which is duplicated mechanically. It requires great skill on his part to create experiences which are effective, and much work. * * *"[1]

Orientation of Students

An important adjunct of the teacher's art is the full cooperation of the students. It must be remembered that there is a difference between teaching and learning and, as one professor expressed it, "the first may proceed at an exhaustive pace without being accompanied by much if any of the second."[2] Students need to understand fully what they are trying to accomplish and how the method or material used is going to further their purpose. They need to see progress commen-

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[1] Mueller, Theodore. Perception in Foreign Language Learning. *The Modern Language Journal,* April 1958.

[2] Brooks, Nelson. Preservice Preparation of the Foreign Language Teacher, *Modern Foreign Languages in the High School,* Office of Education Bulletin 1958, Number 16, p. 137.

Courtesy, Stephens College, Columbia, Mo.

A student compares her speech with the model she is imitating.

surate with the time and effort expended. At the same time they must realize that language learning has a beginning but no end, that only by progressing through many stages of advancement may they expect to gain in the foreign language "mastery" comparable to their command of the mother tongue.

It is therefore time well spent for both the classroom teacher and the laboratory director to give students some careful, unhurried orientation concerning the role of the laboratory in the habit developing phase of their study. When students understand the purpose of the laboratory and the basic theories of language learning which underlie the procedures, their motivation to practice in a systematic, meaningful way is more easily sustained.

In this connection the teacher must also remember that actions speak louder than words. Having discussed the theory, he must see to it that the laboratory practice *is* an integral part of the language course. This means that the laboratory must be used regularly by all students, that the material used for laboratory work must be closely coordinated with classroom work, that the student must be tested on his performance in understanding and speaking, and that his achievement in these skills must be considered as important as his achievement in other phases of instruction. Only if this is done can the students regard their laboratory work as an essential part of the language course. The need to integrate laboratory and classroom activities was emphasized in most of the replies from laboratory instructors. A psychological reason for this integration has been given as follows:

> Unless students themselves see clearly the relationship between laboratory and classroom, many of them will discount the importance of the former, saying that after all the final grade is based principally on work done in the classroom. Others, on the other hand, who are particularly desirous of learning to understand and speak a foreign language, may be deceived by the practical aspects of the laboratory into thinking that grammar is outmoded and should be dispensed with. To avoid both of these extremes it becomes not merely desirable but imperative that work in the classroom be coordinated and integrated with that of the laboratory. * * * Important also is the need for students to realize that the laboratory is no panacea, no easy road to language learning. Rather, it provides an opportunity and an aid, where achievement is directly proportionate to effort.[8]

The Aural-Oral Approach

Although the language teaching profession seems to have reached a consensus on the primacy of an aural-oral approach to language learning, the meaning of an aural-oral approach is not uniformly interpreted. It must be emphasized, too, that *approach* does not imply the whole process.

Depending upon the maturity and background of the individual, the length of time needed to acquire a working use of the spoken language varies considerably, and there is little agreement about the degree of aural-oral proficiency which the student should attain before he begins to read and write. Some teachers believe that the quickest and most natural way of laying the foundation for all the language skills is for the student first to learn through guided imitation to understand and speak with ease a relatively small body of practical conversational material. Other teachers, in an attempt to give balanced attention to hearing, speaking, reading, and writing, have students carry on all these activities simultaneously almost from the first lesson.

The latter procedure is a step forward, since it gives some attention to speaking, but in reality most such courses are of the traditional grammar-translation type with the addition of a few recordings of early lessons to furnish models of pronunciation and with the usual exercises to be translated *orally*.

Differences in theory concerning the length of time which should elapse before material presented orally is studied in written form lead to wide variation in laboratory methods. In some classes the work may be exclusively aural-oral for several weeks or a semester; in others, the material is presented orally and then followed almost immediately, sometimes during the same hour or the next day, by written exercises. In some laboratories students are not permitted to use books at all, on the theory that aural comprehension is not acquired as rapidly by reading and listening at the same time. Teachers point out that students who practice in this way do not understand what they hear when the book is taken away. In other laboratories the student may practice with the book open.

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[8] Randall, Earle S. The Language Laboratory: A New Tool. *The Educational Forum*, March 1956.

These differing interpretations of an aural-oral approach are closely related to what teachers believe about the place of grammar in beginning classes. A working committee of the 1958 Northeast Conference on the Teaching of Foreign Languages has helped to clarify this issue. The committee's report supports the thesis that "the structure of a language can be imparted, good habits established, and bad habits avoided or, if they arise, corrected, through the use of sentences and drills which illustrate the basic behavior of the language."

> The Committee recommends that modern languages be taught by the use of the language itself, in such a way that its structure will not only be clear to the students, but will become a part of the student's habits. The approach should be primarily oral, then written. There should be as little as possible talk *about* language, and this can be eliminated almost entirely by carefully constructed drills, and by having comprehension tested through questions and exercises in the language being taught, rather than by translation.[4]

Audio Instructional Materials

In selecting the learning experiences best provided by the laboratory there immediately arises the question of teaching materials. Many of the course materials available commercially are not ideally suited to laboratory techniques. Instructors supervising laboratory work have expressed the opinion that commercial recordings, while serving a good purpose—that of listening practice, frequently lack the flexibility needed for laboratory exercises and are generally not geared to the course content and organization.

Schools and colleges are meeting the need for materials in various ways. A majority of the college and university language departments make their own recordings for use in the laboratory, although a number (34) use commercial recordings and some (20) use both types. Reports from the high schools are incomplete, but of 35 replying to this question 17 make their own tapes or discs, 12 use commercial records, and 6 use both. One instructor terms the experimentation with laboratory materials and teaching techniques even "more adventurous" than the technical experimentation in electronics which has resulted year by year in improved equipment. Another remarks that the lack of adequate practice material "may possibly be a blessing in disguise, but it still means that the laboratory must operate on a frankly experimental basis. Although one may profit by the mistakes of others, the relative newness of language laboratories necessitates a certain amount of trial and error." Still another exhorts language teachers to discard courageously and without regrets any tapes or books that prove to be ineffective. Few succeed as well as they hope to with their first ventures in "talking book" production.

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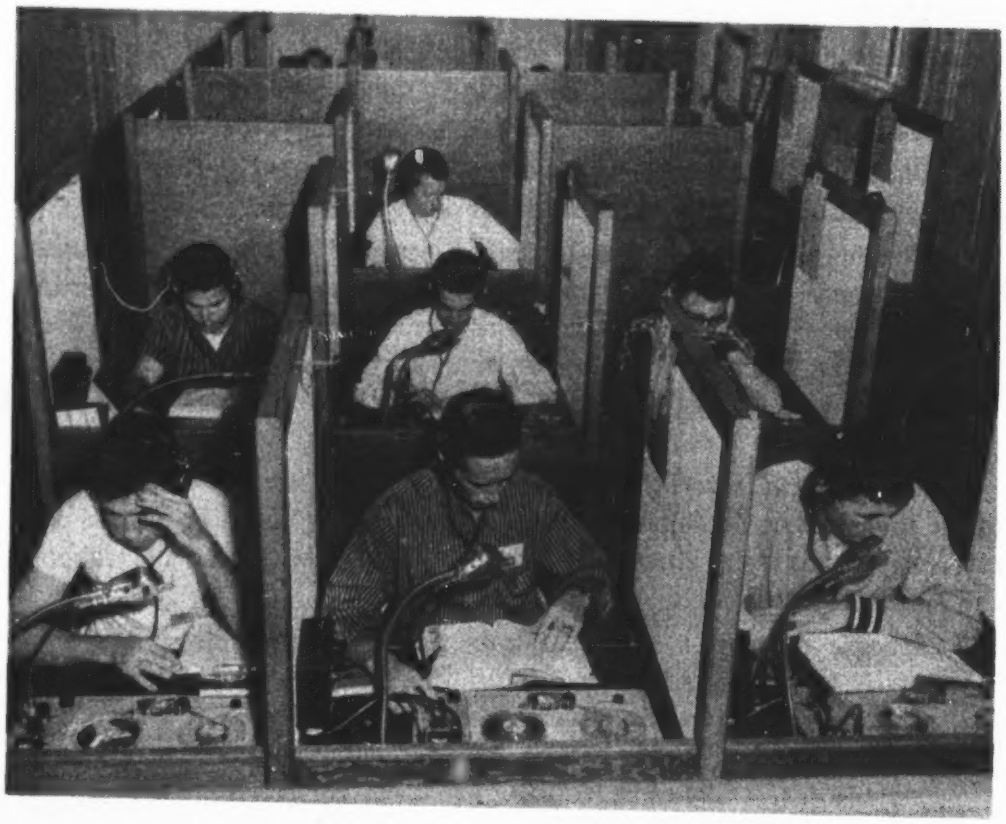
[4] Patterns as Grammar. *The Language Teacher*, Reports of the Working Committees, 1958 Northeast Conference on the Teaching of Foreign Languages. Editor, Harry L. Levy, Hunter College, New York, N. Y., 1958. Available from Professor Nelson Brooks, Master of Arts in Teaching Program, Yale University, New Haven, Conn., $2.50.

Courtesy, University of California, Riverside.

The instructor prepares a tape for laboratory practice.

Many instructors feel that the use of the laboratory as an integral part of the language course involves an entirely new method of teaching and requires completely new materials. A few institutions, such as Middlebury College, Wayne State University, Otterbein College, and the Institute of Languages and Linguistics of Georgetown University, have already prepared their own texts with accompanying audio and visual materials. Many institutions are experimenting with various types of laboratory materials and are planning to develop new ones. At the University of Massachusetts, for example, several instructors have been released from teaching duties "in order to provide time and opportunity for producing original teaching material and textbooks and for devising the best techniques to make them effective teaching tools."

Some schools, on the other hand, are preparing their own tapes or discs to accompany the standard classroom textbook. The material used in the recording is based on the text or adapted from similar material of like difficulty. Since little has been published on the specific content of recordings and on the exact scripts and techniques used, teachers are giving free scope to their inventiveness and are



Courtesy, Davidson College, Davidson, N. C.

Laboratory practice replaces homework.

putting into practice some of their "pet ideas" for aural-oral drill materials.

Whether recordings are commercially produced or homemade, it is very important for the tape or disc to be both pedagogically sound and technically well made. The opinion expressed by one lab director, that the laboratory is of value "only if superior teachers are interested in making superior master tapes," pretty well sums up the general sentiment. Another said, "The first requirement of effective use of the laboratory is well-prepared material properly recorded." Experienced laboratory instructors seem to agree on the importance of the following principles in making recordings.

1. *Student participation.*—Active student participation is assured by the use of pauses on the master tape or disc during which the student must take some action. The length of the pause should be carefully timed so that the student will have time to repeat, or follow the instructions given, but not enough time to lose momentum.

2. *Native voices.*—Since one advantage of using audio equipment is to furnish a good model for imitation, it follows that students should hear as frequently as possible the language as it is spoken by a native.

3. *Multi-voiced recordings.*—If the student is to attain near-native comprehension of the language, he must be trained to understand many different speakers. Several voices in the same recording can add interest. Dialogs, particularly, should have a different voice for each part.

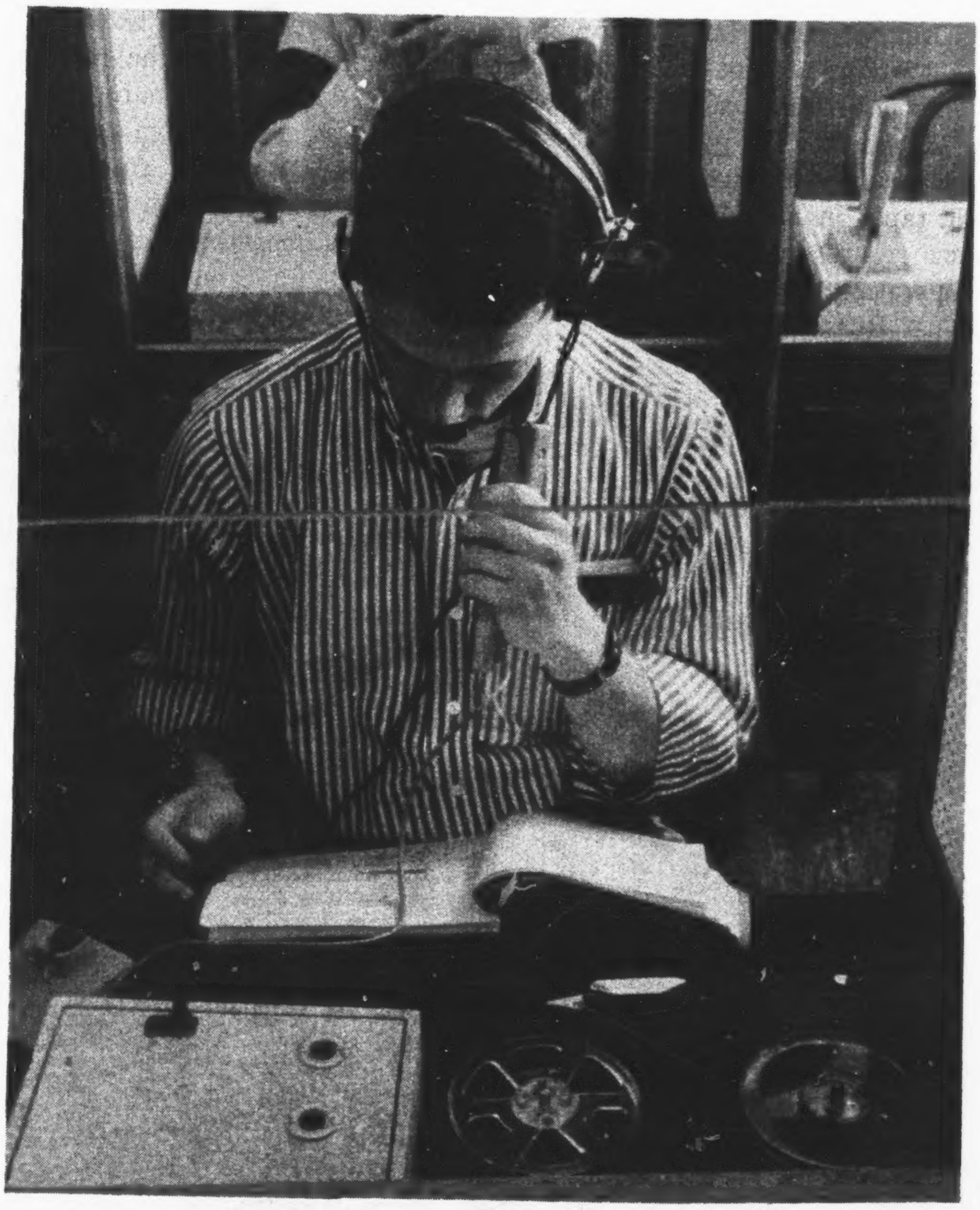
4. *Quality of the voice.*—The voice should express enthusiasm and vitality, and be neither theatrical nor monotonous in tone.

5. *Normal speed.*—In learning to understand and speak at normal conversational rate, it is important for the student to hear and imitate at natural speed. Slowing down more than is allowable for individual differences in the normal rate of speaking will result in unnatural enunciation and intonation and thus divert attention from the meaning of what is said.

6. *Variety and interest.*—Drill exercises, by their very nature, require the student to repeat, repeat, repeat. They must be varied and interesting, however, since purely mechanical repetition fails to hold the student's attention.

7. *Specific purpose.*—Practice units must be built around a systematically arranged sequence of the fundamental patterns of sound and structure. Patterns and forms are modeled clearly and then used freely. Each exercise should have a well-defined purpose.

The possibilities for variety are illustrated in a compilation of answers which 13 colleges and universities contributed to the following questions: (1) What material should be recorded? (2) In what ways



Courtesy, University of Massachusetts, Amherst

A student follows the corrections in his dictation.

can it be presented on the tape in order to provide the most effective learning experience? This study lists 57 techniques for the preparation of recorded material.[5]

Through long-range planning and alertness to passing opportunities, some schools are building up a library of tape and disc recordings which will enrich the language program for years to come. Even where native speakers are not readily available, as in communities not having residents or frequent visitors who speak French, Spanish, German, or other languages, it is generally possible to obtain assistance from university faculties, foreign students, or commercial tape libraries. In one school, tapes in French, Spanish, and German are being received from student groups in other countries. The language department plans, in cooperation with the history teacher, to expand this tape exchange to include Russian and Chinese.

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[5] *Foreign Language Laboratory Techniques.* Prepared in the Foreign Language Laboratory of Louisiana State University for the second MLA Audio-Visual Conference, Published as a supplement of its News-Letter by the Louisiana Foreign Language Teachers Association, 1956. Available for 15 cents from Professor A. Bruce Gaarder, Louisiana State University, Baton Rouge, La.

Courtesy, The Institute of Languages and Linguistics, School of Foreign Service, Georgetown University, Washington, D. C.

The tape library—a collection of master tapes in 38 languages.

Laboratory Methods

Although the brief questionnaire form used in the survey of language laboratories did not provide for information about laboratory techniques, a follow-up inquiry brought a wealth of descriptive accounts. Since how the laboratory is used is the keystone to its success, it seems worthwhile to include here a representative selection of these descriptions. The teaching techniques or procedures used in the laboratory are necessarily closely related to the instructional materials and are influenced to some extent by the type of laboratory organization.

Temple University uses the following techniques in its language laboratory:

> No books or papers are permitted in the booths, and students never see the text of the lab lesson. We have found that if students can *see* a text they will not *listen*. It is easier for them to learn by reading, because that is how they have been trained, but when they read from a text or from a visual memory of the text, their pronunciation is influenced by their English-conditioned habits. We think that the only way to break them of their English-conditioned sound habits and thought patterns is to insist on *hearing* and *imitating*.
>
> a. *3-minute lessons.* All our lab lessons are approximately this long. Each contains a series of questions and answers in the foreign language. These questions and answers try to incorporate as much of the vocabulary and syntax as is feasible, in the form of conversational questions and answers.
>
> b. *Each lesson is played for a week,* and attempts to parallel the classroom work for that week.
>
> c. *Each lesson is continuously repeated,* from 6 to 8 times each half-hour. Each student hears it from 18 to 24 times during the week it is played. (Next year we plan to offer review lessons interspersed between the repetitions of the week's lesson.)
>
> d. *The student repeats both the question and the answer* and is encouraged to anticipate the answer.
>
> e. *The student monitors his own response through headphones.*
>
> f. *The student is tested orally in class* on these same questions and answers. In some of our courses this oral testing constitutes 50 percent of all testing.
>
> g. *The student records only once each semester,* to check his progress. We do not feel that playing back his own recording (which would occupy about one half the lab time if done consistently) is the most efficient technique. The student's recording is filed and used again for successive recordings in following semesters so that he can compare his progress.

A typical situation in the laboratory at the University of California, Santa Barbara College, is described by the director as follows:

> Since we do not have any single method of instruction in our Foreign Language Department, we have tried to make our lab as flexible as possible.

> Perhaps the best way to illustrate our laboratory activities is to describe one or two typical situations. * * *
>
> This situation occurs during an hour when there is no class in session. Student A asks the laboratory assistant for a tape called *How to Study a Foreign Language*. Student B requests *La Vie en Rose*, a popular song that has been treated as a phonetic exercise as well as a piece of music that the student will enjoy singing. Student C brings his own tape. He wants a certain exercise recorded on it so that he can take it home to play at his leisure on his personal tape recorder. * * * A coed asks to hear a certain dictation which she will write down and give to the lab assistant who, in turn, will give it to her instructor for grading. Another student asks for a tape designed to improve his reading ability and still another requests a tape designed to improve his intonation. Now the laboratory assistant, thanks to his push button control panel, can handle each request without delay. He pipes the desired master tapes through seven channels which the students can pick up through their selector switches.
>
> In the meantime, three instructors, who believe it is desirable to give a variety of voices to any oral-aural exercise, are using the recording booth to prepare a tape for the following week. This is a soundproofed, air-conditioned booth designed to record multi-voiced tapes. The recording booth is also equipped for the taping of phonograph records and for the transferring of material from one tape to another.

The high schools of Montgomery County, Maryland, prepare tapes based on lessons in the standard text. The procedure is described below.

> At the present time, the content of the tapes is prepared from the lessons in the textbooks in use in the various language classes. The procedure is as follows:
>
> 1. By way of preparation the teacher records the reading selection in the lesson at a normal tempo.
>
> 2. He then reads the same passage in breath groups allowing ample pause for repetition by the entire class.
>
> 3. This exercise is replayed several times that day and each day thereafter until the entire lesson has been drilled adequately.
>
> 4. On the second day simple questions on the content, devised by the teacher, are added to the preceding exercises. They require on the part of the students almost a parroting of the phrases which they have heard in the reading selection and which they have repeated so frequently.
>
> 5. The following day the questions contained in the text—they are more difficult and constitute a part of the assignment of the previous day—are played on the tape and the appropriate intervals allowed for the responses by the students.
>
> Whenever questions are asked, following the pause allowed for response by the students, the teacher's voice is heard giving the patterned response, and again an interval is allowed for repetition by the students. Verb drills and grammar drills are also taped. Dictation is advantageously administered by the tape, for in this situation there is a minimum of distraction, and the

> necessity of looking up from the paper at a speaker is obviated. It has been observed that the speed of writing approximates that which prevails when the students are writing their native language.
>
> The advantages of this method appear to be many. Every child has an opportunity to speak the language every day. Too, the method allows for individual correction. The teacher passes up and down the aisles, listening carefully and stopping to correct an individual student without interrupting those who are proceeding satisfactorily. This kind of controlled repetition and hearing makes for greater spontaneity of response. Tapes are made and/or provided containing the voices of native speakers, thus offering opportunities to hear the language as it is spoken. It is an excellent device for rectifying deficiencies due to absence, and for remedial work. As familiarity with the equipment progresses and the ingenuity of the teacher has time to function, it is to be hoped that the two skills of hearing and speaking a foreign language will be as effectively acquired as those of reading and writing a foreign language have been in the past.

From Our Lady of the Lake College comes the following description:

> In the intermediate and advanced classes, oral practice is still emphasized, and, in addition, stress is placed on aural comprehension. Plays, lectures, dialogs, songs, poems, etc. are being provided for student use. Armed with a mimeographed copy of the text, or perhaps with an English translation, the student enters the listening booth, hears the recording once or twice without looking at the copy, and then listens while reading the text in order to test her aural comprehension. She repeats this procedure until she understands the spoken text from hearing it alone. These aural comprehension exercises are carefully graded as to difficulty, varied as to type of material, and selected for interest and content value. Pronunciation drill is provided for intermediate and advanced students as the need arises.[6]

Visual Materials

The language laboratory as it is functioning in most schools and colleges makes far greater use of audio materials than of visual aids to language learning. Since language is an audio-lingual process, aural-oral practice is obviously the essential feature of the laboratory.

In the classroom, however, the use of objects and pictures along with gestures and acting is helpful in conveying meaning directly without translation to English. Another advantage of visual aids is their ability to evoke a foreign atmosphere and to make more vivid the culture of the people. Probably the most universally used visual aids are the classroom objects, since talking about the immediate environment is one way of starting to converse in the new language. Objects and people from the country whose language is being studied can be used in infinite variety, and maps are standard equipment.

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[6] *The Catholic Educator*, January 1956.

Courtesy, Tulane University, New Orleans, La.

A 40-booth language laboratory equipped for moving picture projection. (Booths have drop-leaf front panels.)

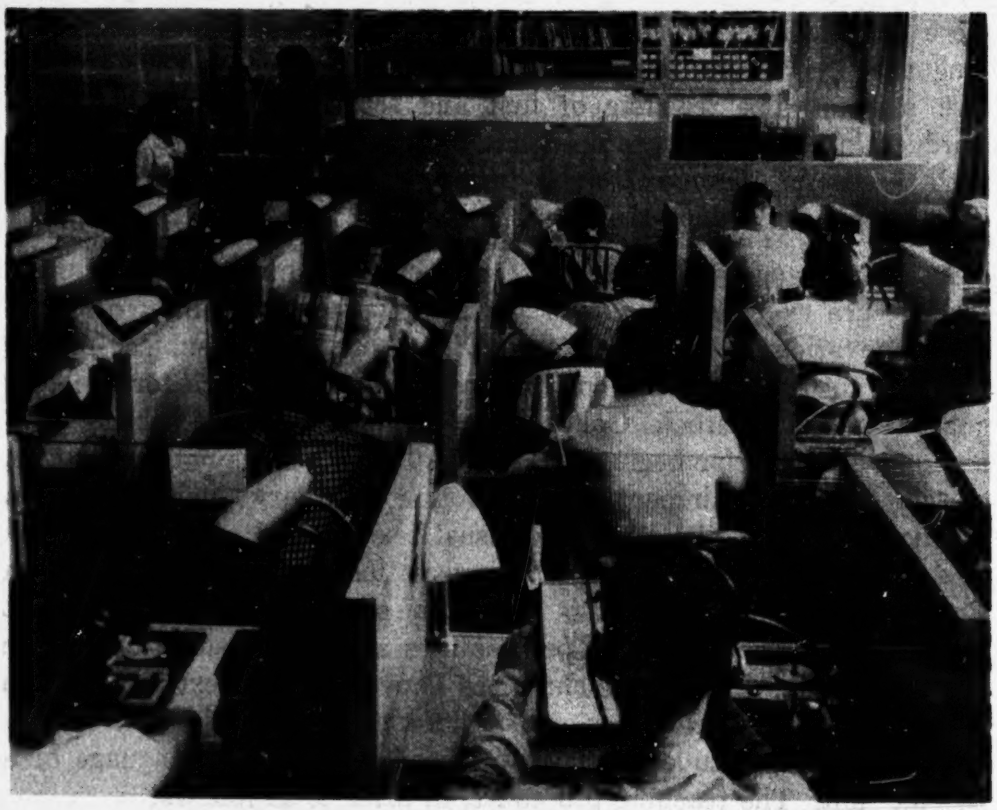
Pictures of all kinds, ranging from stick figures and cartoons to color photographs and motion pictures, help illustrate meanings, provide subjects of conversation, create situations for oral and written composition, lend reality to a story or foreign land, and in general serve to enliven the language practice.

Many language laboratories maintain a regular schedule of sound movies which supplement or enrich the language courses. For the most part, films are obtained on a rental basis from film distributors. A more ambitious use of films is found in a few institutions, where the language instructors themselves make, edit, and sound-track their own movies. The teaching of first and second semester German at Purdue University, for example, has been strengthened in this manner with the use of 16mm moving picture films in color made in Germany by members of the department.

A few language departments, both in the universities and high schools, are experimenting with visual materials on a different basis. The innovation is that visual material furnishes the subject matter and the entire situational context or frame of reference for the language course. Otterbein College, for example, is experimenting with a sound-film text for beginning French. Its purpose is not motivation, enrichment, entertainment, or any other auxiliary function, but a language teaching film, an audio-visual text instead of a printed one. The film consists of a series of conversational episodes occurring in France. Two main characters carry the story and lead the student to identify himself with real personalities and actual situations in the foreign culture. The lip-synchronized conversational text is based on carefully graded vocabulary and syntactical items. No written text is used until the student can comprehend and use the language of a specific unit. The teaching procedure, in brief, is as follows:

> In the classroom the student views the film repeatedly, getting from the situation and the conversation an understanding of the scene. He is led by the teacher, step by step, to figure out the relationship between sound and action. The sound then becomes identified with meaningful experience.
>
> The student is given immediate oral drill on the language he has just comprehended. The material which is thus partially taught with the movie in the classroom becomes aural-oral homework on records in the laboratory. Plans are being developed for projectors to be used in the laboratory to continue the visual simultaneously with the aural-oral drill. Students must go to the laboratory to prepare this homework, since it is available nowhere else. Later the language patterns are practiced in a freer type of conversational situation, stimulated by the use of slides and still pictures. At this more creative stage the class is divided into smaller conversational units of 6 to 8 who are led by an advanced student in the language or by foreign-born departmental assistants and teachers.
>
> When the student has sufficient aural-oral facility, he is taught to spell and then to read and to write. Grammar is taught as such only after the grammatical forms have already been learned in context and used meaningfully. An irregular verb is introduced in context when logically needed and always as a vocabulary item. More formal analysis and drill are given after students can use the verbs with comparative ease.

Another "new frontier" in the teaching of modern languages through audio-visual materials is the Modern Language Audio-Visual Project, which was organized in 1956 at Wayne State University. The French



Courtesy, Wayne State University, Detroit, Mich.

Aural-oral practice of lesson which was first presented in class with color slides.

Pilot Program, which has been extended to 7 universities and 7 high schools, offers a completely audio-visualized course in beginning and intermediate French. Courses of a similar nature are to be developed in Spanish, German, Russian, and English as a foreign language. The beginning French course, *Images de France*, is based on 1,200 color photographs (slides for class presentation and filmstrip for laboratory practice) and provides tape recordings of the 40 lessons in French with accompanying workbook.[7] The intermediate course consists of sound, color, teaching films complete with tape recorded scripts and exercises. These films include literary masterpieces and dramatizations produced in French by professional French actors. The following is an example of the way one story is presented.

> The class hour, or part of it, can most profitably be devoted to providing the experience, telling the story with the visual support which assures its being understood and makes of it a real experience. This experience gives the student a frame of reference, a context in which vocabulary items find their place by association. Study, in the traditional sense of "learning words

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[7] Wachner, Clarence. "Emphasis on Cultural Content and Conversational Fluency: Audio-Visual Instruction," *Modern Foreign Languages in the High School*, Office of Education Bulletin 1958, No. 16.

> and rules," ceases to exist. Study becomes the repetition of speech in a known context, based on experience. * * * Meaning is best gathered and remembered from the oral and visual context as it is given in the taped dramatization and the accompanying slides. Listening to the tapes repeatedly conveys the meaning of practically every word. The situation created by the story and the pictures, together with the intonation and voice qualifiers of the actors, interpret meaning.[8]

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[8] Mueller, Theodore, and George Borglum. *Linguistic Pattern Practice Based on Saint-Exupéry's Le Petit Prince.* Foreign Language Department, University of Florida, Gainesville, 1958.

VI. Evaluation

There appears to be no question about the worth of the language laboratory in the judgment of teachers who are actually using it. All of the schools and colleges participating in the survey have reported that the educational results justify the continuance or further development of language laboratory facilities. The value most frequently noted was that it provides favorable conditions for developing aural-oral skills—regular practice, good models to follow, opportunity for self-evaluation and individual advancement. The head of a university language department wrote:

> This is truly a new dimension in foreign language learning, a Copernican step forward in *quality*. Combined with the 25 to 1 ratio of increase in *quantity* of oral practice, the improvement is spectacular. And it can be had for less instructional cost than the traditional teaching.[1]

Several laboratory instructors mentioned that laboratory practice helps take care of individual differences in learning rate and that it is a boon for the teacher who has gifted students and slow learners in the same group. The following comments are typical.

> The lab permits attainment of quality in pronunciation, aural comprehension, and oral production never possible before.
>
> Especially in elementary classes there is noticeable gain in aural-oral control. Enhances interest in the language, develops self-confidence.
>
> Invaluable, almost a necessity, for an effective aural-oral approach. We could not get along without the lab now that we know its value.
>
> Indispensable for spoken language teaching, even if plenty of teacher hours are available. With the lab there is better balance between oral-aural and visual learning.
>
> Relieves teacher of much aural-oral drill; saves class time in remedial work, testing, reviewing tests; especially valuable as a practice and study aid.
>
> With the tape or disc recorder, which is the heart of most laboratories, identical repetitions and availability for use at any time are obvious advantages for practice.
>
> Concentration is better. The headphones tend to shut out extraneous sounds.

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[1] Hocking, Elton. The Language Laboratory. *College and University Business*, June 1957.

Courtesy, Lincoln High School, Lincoln, Nebr.

A student makes an individual recording inside the control booth.

Having a variety of native voices on the tapes helps develop aural comprehension, particularly if the teacher does not speak the language natively.

The laboratory makes it possible for students to develop ability for self-study and to learn the language faster, to understand normal speech at once, and to write, minimizing the translation from one language to the other.

It is of immeasurable value to slower students who, if they really want to learn a language, can spend any amount of time listening to the tapes and records.

> Progress becomes a very real and tangible thing to the student, for his achievement at given periods is quite literally a matter of record—far more concrete and meaningful than a mere letter grade.

Replies to the question on the laboratory as a possible means of alleviating teacher shortages indicate that opinion is divided. Slightly more than half of the college teachers believe that the laboratory could, with proper planning, be made to compensate partially for the impending shortage of teachers. Wayne State University, for example, has demonstrated that with the use of the laboratory a teacher can handle 75 students in a single class. Since the materials used for the laboratory are closely integrated with each classroom lesson, the necessary drill and individual practice can be done for the most part with tapes or discs. The classroom time can then be used for presentation of the new lesson. The laboratory can also be used for testing. With these time-consuming activities removed from the class itself, several teachers report that they are able to manage larger classes. The following are some of the other reasons given for believing that the laboratory could help compensate for too few teachers.

> A lab program that is well integrated with the classroom relieves the teacher of a tremendous amount of repetitive drill, for one tape serves an unlimited number of sections.
>
> In the language lab the electronic machine can command the attention of all the students throughout the drill in question, and it has the added advantage of letting the student hear his own voice in reproduction. In the class, on the other hand, while the instructor is coaching one student, the other 20, 30, or 40 students are daydreaming or waiting for their turn.
>
> A pre-recorded lesson can be more carefully worked out and rehearsed than the conventional classroom performance. When a recorded lesson proves successful, it can be kept for use the following semester or year, thus paying dividends on the time initially invested.

A third of the college teachers and over half of the high school teachers, however, believe that the laboratory could not help relieve the teacher shortage. Eventually, when it is firmly established, well integrated with class work, and adequately supplied with suitable drill materials and tests, it is expected that the laboratory may free the teacher for more creative teaching. In its developmental stages, these teachers find, the laboratory requires more of the teacher's time than the usual class work. The justification for the laboratory, they believe, is that it enables them to do a better job of teaching aural-oral skills. "To sum up," one director said, "the language laboratory serves to increase the effectiveness of the time our students are with us; it gives them much more practice; it multiplies the presence of the teacher; and it adds an element of motivation for today's young people."

Such opinions, all based on experience varying from one term to 10 years or more, are supported in some instances by test results. The following, for example, is a summary of test scores in first semester beginning French at the high school level. The experimental classes were in 4 high schools using audio-visual teaching materials and techniques; the control classes were in 4 other high schools using standard text materials and teaching techniques. All were given the same tests of basic skills—aural understanding, speaking, reading, and written composition. The tests, which were uniformly administered, were constructed and scored by teams of high school and college teachers of French.

Table 7.—Achievement in first semester French in 8 high schools

Scores	Percentage of test scores in—	
	Experimental groups	Control groups
Aural Understanding		
high	17.2	3.4
average	51.4	56.6
low	31.4	40.0
Speaking		
high	17.2	5.3
average	63.6	52.7
low	19.2	42.0
Reading		
high	31.8	38.9
average	36.4	40.6
low	31.8	20.5
Writing		
high	57.5	51.0
average	29.5	29.3
low	13.0	19.7

The fact that the control groups scored somewhat higher on the reading test seems to confirm the age-old theory that the nature of the objective in teaching a foreign language determines the approach or emphasis and that the approach in turn affects the kind of learning achieved. Thus, where the primary objective is to teach students to communicate orally in a foreign language and the emphasis is aural-oral, pupils score higher in aural understanding and in speaking.

One of the universities, to cite another example, administered to first-year French and Spanish classes a recorded test that had been used in the department for 2 years before the laboratory was established. In the French groups the average mean score was more than double that of the previous groups. In the Spanish classes it was nearly 20 percent higher than that of the previous groups tested. In both French and Spanish there was marked improvement in the average score of the lower half of the group. Objective reading tests showed that the increased emphasis on aural-oral work had not resulted in any loss of reading achievement, since scores for the laboratory groups were also higher than those of their predecessors in reading.

Another university gave written tests to 41 students in 2 Spanish classes which had been required to listen to a 45-minute tape for each lesson of the course. The results, as compared with two different kinds of control groups, were "encouraging to a surprising degree." Since the experimental group also achieved a much better oral-aural command of Spanish, it was concluded that further refinement of the tape used in the experimental group would be useful. A college testing program involving 100 elementary French students reported acquisition of aural skill "heretofore unattainable in one year" with "highly satisfactory proficiency in reading and grammar."

On the whole, however, very little objective testing has been done to compare the achievement of students who have used the laboratory with that of others who have not used it. In a survey of 74 colleges and universities in 1957, only 14 reported the use of objective tests for determining the effectiveness of the laboratory. Of the 14, 9 obtained positive results in favor of the language laboratory. The others obtained inconclusive results or considered the data invalid for a variety of reasons.

Part of the failure to evaluate in any objective fashion the educational outcomes of laboratory instruction is explained by the fact that few satisfactory tests are available. Some teachers construct their own aural comprehension tests. The College Entrance Examination Board uses aural comprehension tests in French, German, and Spanish in the Advanced Placement Program and offers them for college use. The Board expects to include these tests in the regular admissions tests for high school juniors and seniors as soon as the availability of audio equipment needed for such testing is assured. Objective tests of speaking ability or "oral achievement" are being prepared by a standing committee of the Northeast Conference on the Teaching of Foreign Languages.

In the meantime, much professional activity is being directed toward experimentation and evaluation. At the University of Massachusetts, for instance, after much careful preparation in organizing the laboratory, the language departments plan to put to use all that the various members of the teaching staff have observed and learned about the use of the laboratory. With the guidance and active collaboration of the Department of Psychology and the School of Education several controlled experiments will be conducted at the elementary and intermediate levels of French, German, and Spanish. The program administrator states, "We have learned enough at this point to be convinced that further experimentation is necessary. We feel optimistic that the results will justify the great financial outlay and the tremendous amount of human effort required by the project."

There is such obvious need for more experimental evidence on the values of various types of materials and techniques for the language laboratory that teachers are constantly being encouraged to try out audio-visual methods under controlled conditions. The director of the language laboratory of the University of California at Los Angeles offers some guidance in setting up a controlled experiment.[2] An illustration of such an experiment undertaken by a classroom teacher is in progress at the laboratory school of Ohio State University. In this experiment, all the foreign language students in first- and second-year classes were divided into 2 groups of "assured equal ability." (The basis for matching was not explained.) One day a week in each class one group goes to the laboratory while the other group remains in the classroom. Both groups are given the same material; one group *hears* it only and the other group *sees* it only. The former group answers questions on magnetic discs while the latter group writes the answers in the foreign language. The purpose is to ascertain which group makes the greatest advances in all skills by the end of the year.

In evaluating the effectiveness of the language laboratory there is need also for objective evaluation of laboratory equipment. The great variety of mechanical and electronic devices available in the audio-visual field is constantly growing, and improvements and new inventions are made nearly every year. Considerable assistance in selecting machines for given purposes is available from companies engaged in the manufacture of A-V equipment. Professional consultative service may be obtained from The National FL A-V Committee, whose membership of 35 represents institutions which have pioneered in the development of language laboratories. For a number of years at annual meetings of associations of language teachers there have been discussions and demonstrations of language laboratory techniques. Such evidence of effective work and promising ideas led to the organization of this national Committee, which emerged in 1957 from a conference sponsored by The Modern Language Association of America. The Committee's purpose is 3-fold: (1) to judge the relative merits of the several audio-visual devices and techniques now in use in the teaching and learning of a second language, (2) to present to the profession an objective evaluation of these devices and techniques, and (3) to further the production, distribution, and use of course materials, testing instruments, and technical and pedagogical methods designed to improve instruction in modern foreign languages through the use of audio-visual tools. Three coordinators, with teams of experts, have been named to provide services in technical problems, publications, and methods and materials. Requests for consultative service to schools and colleges planning a language laboratory may be addressed to Professor Bruce Gaarder, Chairman of The National FL A-V Committee, Louisiana State University, Baton Rouge, Louisiana.

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[2] Pimsleur, Paul. Experimental Design in the Language Field. *Modern Language Forum*, December 1957.

The language laboratory directors and department heads in numbers of colleges and universities have become active in guiding and assisting teachers who wish to plan or improve their use of a language laboratory. There are now several annual workshops in language laboratory techniques and materials, and numerous inservice courses cover the various aspects of audio devices used as teaching aids. These courses include techniques of oral-aural teaching; selection, use, and maintenance of equipment; selection and preparation of material for recording; script writing; microphone techniques; mixing and editing; building and care of a tape and record library; plans and problems of a high school laboratory. In most such courses the university language laboratory is made fully available to teachers for observation, demonstration, and practice.

Courtesy, The Institute of Languages and Linguistics, School of Foreign Service, Georgetown University, Washington, D. C.

An installation for training in simultaneous interpretation.

The extent of interest in this type of inservice preparation and evaluation may be judged from the attendance at a one-day workshop sponsored in April 1958 by the New England Chapter of the American Association of Teachers of Spanish and Portuguese with the cooperation of the NEA Department of Audio-Visual Instruction. This workshop, held at Bradford Junior College, included 16 separate groups composed of language teachers, audio-visual experts, and equipment dealers. It was attended by 600 teachers of Spanish, French, German, and Italian, and by many principals and superintendents of the area.

With the assistance of the colleges, some county and city school systems conduct year-round workshops on laboratory techniques. There is need, however, for more guidance in the preparation and use of audio-visual materials.

That the language laboratory is highly regarded by the teaching profession is shown by the enthusiastic opinion of teachers who have had experience in using it, by the experimentation which is being done to improve methods and techniques and to develop new materials, and by the workshops which are being conducted for the training of teachers in the use of the laboratory. Additional evidence of its worth is shown by the rapid increase in the number of laboratory installations and the expansion of facilities already in existence. The faith of the public in the language laboratory as a valuable asset in the teaching of the oral-aural ability so much needed in today's world is demonstrated by the action of the 85th Congress, 2nd Session, in approving the National Defense Education Act of 1958 (Public Law 85-864).[3]

This legislation authorizes Federal grants to State educational agencies for acquisition of laboratory and other special equipment, including audio-visual materials and equipment and printed materials (other than textbooks), suitable for use in providing education in modern foreign language in public elementary or secondary schools, and minor remodeling of laboratory and other space used for such materials or equipment. The bill also provides for the expansion or improvement of supervisory or related services and for institutes for individuals engaged or preparing to engage in the teaching, or supervising or training teachers of any modern foreign language in a public elementary or secondary school. In addition, funds are authorized to conduct research on more effective methods of teaching modern foreign languages and to develop specialized materials for use in such training.

It appears, then, that the language laboratory is beginning to emerge from a purely experimental and developmental stage to full acceptance of its role in preparing more Americans to communicate directly with the various peoples of the world.

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[3] Copies of PL 85-864 are available from the Document Room, U. S. Capitol, Washington 25, D. C.

APPENDIX I: Sample Description of the Basic Design and Possible Functions of a Language Laboratory

Memorandum to the Faculty of Macalester College

HARRY L. BRATNOBER

Director of the Language Laboratory

March 10, 1958

INTRODUCTION

It is the purpose of this report to present an explanation of the type of laboratory being considered so that we are all "speaking the same language" when we talk about this project in its planning stages, and so that there is no confusion about the potential of this teaching tool with which we shall have the opportunity to work. It is hoped that members of the college administration, friends of the college, language teachers, the Audio-Visual Department, the Comptroller, and manufacturers of sound recording and reproducing equipment will all profit from a reading of this proposal.

BASIC DESIGN OF THE PROPOSED LABORATORY

Reference should here be made to the last page of this report. This (p. 68) shows a possible floor plan of the proposed lab, and it is hoped that it will clarify the description to follow. The plan is, of course, subject to change, but it is at least a point of departure. It will be noted that the subject space is to be divided into the following areas: (1) Laboratory proper; (2) Master Console and Director's Office; and (3) Recording Studios.

(1) *The Laboratory proper.*—This is a room to be equipped with 25-30 booths for student use. Each booth should measure approximately 5 feet in height, 32 inches in width, and 2 feet in depth, with a counter top 30 inches above floor level. The partitions between the booths should extend back at least two feet from the edge of the counter top, and they should be treated with

acoustical tile from counter height to the top. The lower half of the third interior surface of the booth should be treated with acoustical tile, and its upper half should consist of a pane of glass[1] to enable the student to have a clear view of visual materials projected on a screen at the front end of the lab.

Each booth should be equipped with a tape mechanism and amplifier, a set of high-quality crystal headphones, a crystal microphone mounted on a boom or gooseneck stand, a panel of five jacks (with volume control) which will enable the student to plug into any one of four main channels or to the output of a sound motion picture projector, and patch cords for making necessary connections. Provisions should certainly be made for having more than five jacks in the booth in view of possible future expansion to a system with a greater number of master channels. It is hoped that the tape mechanism and related equipment in the booth can be mounted on a panel at about a 60-degree angle to the counter to give the student as much working space as possible.

A monitoring panel should be installed in a counter in the front of this room. This panel is simply a metal plate with a series of phone jacks in it. Each jack would be connected directly to a recorder in one of the booths in the laboratory. Thus a teacher could sit at the monitor panel and plug in (with a headset) to any booth in the lab in order to make a critical analysis of the work (pronunciation, intonation, grammar, etc.) being done by the student in that booth. It would, of course, be very desirable to make this a two-way communication so that the teacher could talk to the student for "on-the-spot" criticisms. This feature, however, becomes rather expensive, and it does not seem indispensable at this time.

In addition, this room should have a 16mm sound motion picture projector at the back of the room, and a projection screen at the front of the room. These should both be mounted high enough above floor level so that booths and students' heads will not interfere with the projected image, and so that students in all booths will have a clear view of the screen. It may be necessary to raise the floor level of the two rear rows of booths (as in a theater) to give students in these booths an unobstructed view of the screen. The sound projector should be suitable for the playing of optical *or* magnetic sound tracks.

This room should also have ample tackboard and blackboard space for the posting of assignments, schedules, etc., and suitable space for students' coats, hats, and books. The interior walls of the room should be treated with acoustical tile both for purposes of keeping extraneous noises out of students' recordings and for purposes of containing within the lab the "mumbling" effect which must necessarily take place when several students are speaking at the same time. It would be *most* desirable to have this room air-conditioned because of body heat, the heat generated by all of the electronic equipment, the lack of good air circulation resulting from the booth partitions, and the desirability of keeping equipment and tapes as free as possible from dust and excessive humidity.

(2) *Master Console and Director's Office.*—This room should contain a counter with four tape mechanisms and amplifiers installed in it (these are the "master" machines) and a desk and chair to serve as a work space for any student assistant(s) who might help operate the lab. A plate with four jacks should be installed in the counter, and these jacks should be wired to the corresponding jacks in the students' booths. These four tape recorders would then become Channels 1, 2, 3, and 4, and any student in any booth could plug into any one of them or into the channel connected to the sound projector. Thus, four groups of

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[1] Editor's note: Some booths are constructed with drop-leaf or slide fronts.

students studying four different languages or four different levels of the same language could use the laboratory at the same time. It should also be noted that a teacher could plug a microphone into any one of the tape recorders at the Master Console and speak to all students in the lab who are plugged into the channel of that recorder.

This room should also provide space for the storage of tapes and accessories as well as office space for the director of the lab.

(3) *Recording Studios.*—These should be two small soundproofed rooms for the preparation of master recordings by teachers and for individual student-teacher work. One of these need have only a minimum of equipment: a table, two chairs, a tape deck, amplifier, and loudspeaker. The other should have not only the above equipment, but also a second tape deck and amplifier, a phonograph turntable and pick-up arm, and a short-wave radio. This equipment (with necessary patch cords and electronic mixing equipment) make it possible to copy tape on tape, phono on tape, radio on tape, or to mix any of these with the teacher's voice recorded from a microphone. The two rooms should also have the same facilities for listening to and recording the master channels as the booths in the main laboratory. That is, they should have the four jacks for the four master channels installed in them.

POSSIBLE USES OF THE LANGUAGE LABORATORY

It would be impossible to outline *all* of the possible techniques of teaching a foreign language in a laboratory of the type herein described. It does, however, seem advisable to outline *some* of these techniques so that teachers can begin to think in terms of how they want to use the lab. It should first be pointed out that the proposed lab is "audio passive" (the student can listen *only*), *and* "audio active" (the student can record his own voice and then listen to it), *and* "evaluatively audio active" (the student can record and listen to his own voice and that of a master simultaneously).

For the benefit of teachers who have never had the opportunity to use a language laboratory, the following are some of the main uses to which it may be put. The choice of these techniques will obviously vary with the teacher, the language, the objectives of the course being taught, and the level of ability of the class.

(1) *Pronunciation or phonetics.*—The teacher prepares a tape with words or phrases to be imitated, and leaves pauses between these words or phrases. As this tape starts to play over a master channel, the student (plugged into that channel in his booth) starts the tape in his booth. During each pause on the master tape, the student repeats into his microphone what he hears on the master tape. When the exercise is over and the student rewinds *his* tape in the booth and plays it, he hears a recording of the master recording with his own recorded answers in the pauses for an accurate comparison. (Note: In all exercises, the student should hear *himself* through his own earphones whenever he speaks into his microphone.)

(2) *Grammar and sentence structure.*—The technique is basically the same as that described in paragraph (1), except that the student is no longer simply repeating what he hears. The teacher prepares a tape using any one of several techniques (e.g., English sentences to be translated into the foreign language, sentences in the foreign language to be modified in some way, questions in the foreign language to be answered in the foreign language,

etc.). After each item a pause is left during which the student is to record his answer. It may be desirable in some cases to record the *correct* answer *after the pause* on the master tape to give the student an on-the-spot check as to the accuracy of his answer.

(3) *Aural Comprehension.*—While nearly *all* work in the laboratory involves aural comprehension, the following techniques lend themselves particularly well to this phase of language learning:

(a) *Story or anecdote recorded by teacher.*—The teacher prepares a tape by recording a story or anecdote. After the story or anecdote, the teacher asks questions based on it, and the student records his answers to these questions.

(b) *Foreign language news broadcast.*—The teacher makes a recording (using a short-wave radio and a tape recorder) of a news broadcast in the foreign language. He then makes a copy of this tape on another tape, editing it as he does so and adding questions about the broadcast which the student must answer. The preparation of such a tape is not difficult, and it is an excellent technique for forcing the more advanced student to gear his aural comprehension to the speed of the native speaker who cannot be "slowed down."

(4) *Foreign language movies.*—These may be studied in several different stages. If the film is based on a play or novel, the teacher may first have the class read that play or novel. Then the class may see the film in the laboratory. In this case, the sound output of the motion picture projector is piped into the fifth master channel. The students sit in their booths and view the picture (preferably *without* subtitles). The teacher may wish to have certain students record the sound track from certain scenes on the recorders in the booths. The students can then study these scenes on their own and prepare to re-enact certain scenes at a later showing of the movie during which the sound is *turned off.*

(5) *Filmstrips or slides with accompanying tape recording.*—This is somewhat the same technique as that just described in paragraph (4). The teacher prepares a filmstrip or set of slides for viewing in the lab by making a tape recording to accompany it. The commentary can be cultural in nature, describing historical sites, monuments, etc.; or it can be something as simple as a vocabulary building exercise where the student makes an association between the image on the screen and the spoken word on the tape to learn a new word or idiom. Again in this case, the filmstrips or slides can be projected at a later date *without* the tape recording, and the students can be asked to supply the appropriate commentary.

(6) *Oral self-expression.*—The teacher describes a situation briefly on tape or projects a slide depicting a certain situation, and the student is asked to describe the situation, recording his answer on his own tape. An amusing and interesting variation is to give the student (by means of the projector) a humorous cartoon without a caption and ask him to supply a caption.

(7) *Cultural material.*—This will generally be an "audio-passive" technique. The student sits in his booth and listens to a recording of a play, the reading of certain portions of a novel, the playing of excerpts of music by a foreign composer, etc. It is largely up to the ingenuity of the teacher to discover ways of making the student become "audio active" during such recordings.

(8) *Dictation.*—The teacher prepares a tape by reading a passage at a given

rate of speed, allowing time for the student to write exactly what he hears during pauses on the tape.

(9) *Songs.*—Both popular music and more traditional or classical music (with words) can be used. The teacher can prepare a tape in much the same way as that in which he prepared the news broadcast.

(10) *Aural-Oral tests and examinations.*—Almost all of the above techniques can be tested in the laboratory. Such testing can be done in the form of short quizzes, hour tests, or final oral examinations of one hour or more in length. Let us consider paragraph (2) above to illustrate a typical testing technique. The teacher prepares the test tape exactly as he has prepared the tape described in paragraph (2), leaving pauses of predetermined length between questions. This tape is played over one of the master channels to the students sitting in their booths. The students answer their questions exactly as they did in the exercise described above, but they *do not* leave their recorders running throughout the examination. In this testing situation, a student starts his recorder only when he is about to record an answer, and he stops his recorder immediately after finishing an answer. At the end of the period, all students hand in their reels of tape just as they would hand in a written examination, and the teacher corrects them in one of the private recording studios. The fact that the students have *not* left their recorders running during the examination cuts the teacher's correcting time in half, since he does not have to listen to all of the *questions*. He simply listens to the students' answers with no pauses between them.

These are obviously not all of the possible techniques which can be used in a language laboratory, but they may serve as a point of departure for the teacher who wishes to design a course to fit the laboratory or for the teacher who merely wishes to supplement his existing course with occasional use of the laboratory by his students. Incidentally, lest the prospective laboratory teacher think that all work done in the laboratory must be aural-oral by nature, it might be noted that variations (in writing) can be done on many of the above-described techniques. For example, the teacher might give the students a set of English sentences on a worksheet and ask the students to record the sentences in Spanish in the laboratory. A passage might be read in German requiring a recorded *or* written paraphrase in English. A student might be supplied with a sheet of multiple-choice answers (in French) for aural comprehension questions played over one of the master channels in French.

ADDITIONAL SUGGESTIONS AND COMMENTS

Some schools have designed and installed laboratories on the assumption that they would "free" teachers, and many have expressed the hope—for some a fear—that the laboratory would eventually replace the teacher. The fact of the matter is that the teacher's job is generally *increased* when he uses the laboratory, at least at the outset. The recorders may become your slaves, but the slaves will always need a master. The recorded tape can tell a student that his answer is wrong, but it can't give him a full explanation of *why* it is wrong.

On the other hand, the benefits which your students will enjoy in using the language laboratory will undoubtedly be such that you will feel more than justified in instituting a laboratory course for any given level of the language you are teaching. If you start an experimental or "pilot" course when the laboratory facilities become available, you will probably stay with it. The rewards are many.

It is hoped that teachers will not feel hesitant about using the equipment in the lab. Some teachers are frightened at the very sight of a tape recorder, but they think nothing of shifting the gears of their automobiles, adjusting the pictures of their television sets, and operating various automatic appliances in the home. Simplicity and standardization are among the most important factors in the selection of the basic recording equipment for the lab, and it is hoped that once a teacher knows how to use one machine, he will know how to use all of them. Furthermore, the job of the laboratory director will be not only to educate students in the use of the equipment, but also to educate and aid teachers in these matters.

There are various schools of thought on scheduling classes and sections in a language laboratory. Many teachers prefer regularly scheduled class meetings in the lab (in lieu of the classroom) on certain days of the week; others think of the lab as they do of the library where the student goes to work during his free time in preparation for a coming class period. No attempt shall be made in this report to say that one of these two general schools of thought is right or wrong. The matter is simply brought up here for consideration by prospective lab teachers.

It would seem advisable for all students using the lab to own their own reels of recording tape. This tape is now available on a very durable mylar base and it is not too susceptible to breakage. In classes where students may have to hand in a recorded test one day and start working on a new lesson the same day or the following day, it may be necessary for each student to own *two* reels of magnetic tape.

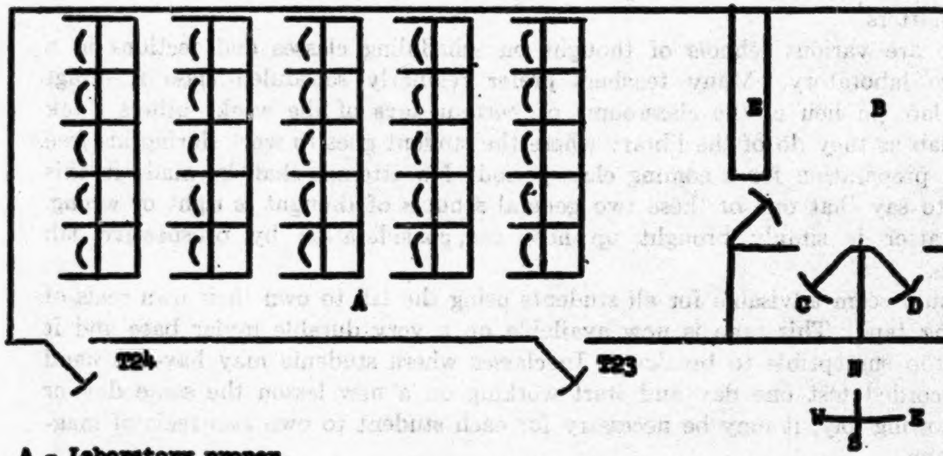
It is hoped that teachers who read this report will feel free to make suggestions and ask questions about the proposed lab. The sooner we are all in accord as to the basic design and functions of the lab, the sooner we can finalize our plans. It is very sincerely hoped that we can have a language laboratory to meet the needs and requirements of all language departments.

PROPOSED FLOOR PLAN

LANGUAGE LABORATORY

Little Theater, Rooms 23 and 24

1/8" = 1'



A - Laboratory proper.
B.- Master Console and Director's Office.
C - Recording Studio.
D - Recording Studio.
E - Counter for machines which will play master tapes.

Note 1: Window over counter "E" will give view of laboratory from Master Console.

Note 2: Studios "C" and "D" to be soundproofed from noise of corridor and outside entrance just south of them.

Note 3: Laboratory proper will have three large double windows on north wall.

Note 4: Present rooms have 11-foot ceilings, concrete floors, and composition-board walls.

Note 5: 8-foot distance from partition at "E" to front row of booths is designed to give students in front row a good view of the projection screen on partition at "E."

Note 6: A master switch should be provided near the door between "A" and "B" to turn off all electricity in the laboratory except that used for the overhead lights. Master light switches should be provided near doors "T23" and "T24."

Note 7: The entire electrical system of the laboratory should be isolated so that the turning on and off of lights, vending machines, and appliances in other parts of the building will not result in power failures or interferences on students' or master recordings.

Note 8: Monitoring panel to be placed in room "A" at partition by "E".

APPENDIX II: The Questionnaire

SEC-10

Budget Bureau No. 51-5716
Approval Expires January 31, 1958

Survey of Foreign Language Laboratories in Secondary Schools and Institutions of Higher Education: 1957

I. INSTRUCTIONAL USE

	Yes	*No*	*Number*
1. Our lab is used for instruction in—			
a. Spanish	____	____	
b. French	____	____	
c. German	____	____	
d. Other (Please specify.)________________	____	____	
2. Our lab is used by—			
a. beginning students	____	____	________
b. intermediate students	____	____	________
c. advanced students	____	____	________
3. Do any classes, as such, meet in the lab at regular fixed hours?	____	____	
4. Students, as individuals (Check one only.)			
a. must devote a specific number of hours per week to work in the lab	____	____	
b. are encouraged, but not required, to use the lab	____	____	
5. Mostly, we make our own recordings. (Check one only.)	____	____	
Mostly, we use commercial recordings.	____	____	
6. The lab director also carries a full teaching schedule. (Check one.)	☐		
The lab director is given a reduced teaching schedule.	☐		
If the teaching schedule is reduced, it is by what percent?	____		
7. Our lab is well established. (Check one.)	☐		
Our lab is still experimental.	☐		

II. VALUE

	Yes	*No*
8. Our educational results justify continuance or further development of language laboratory facilities.	____	____
9. Our lab is a kind of unnecessary extra and may not be continued.	____	____

	Yes	*No*
10. With proper planning, the lab can be made to compensate partially for the impending shortage of teachers.	____	____

11. Other opinions about the lab's instructional value: ____________________

III. EQUIPMENT AND COSTS

	Number	Average unit cost
12. Tape recorders, single track		$
dual track		
13. Magnetic disc recorders		
14. Phonographs		
15. Student booths with headset only		
headset and mike		
headset, mike, and recorder		
selector switch and dial		
16. Other equipment (Please specify.)		

17. Cost of all special equipment for FL training $

18. Cost of installation of this equipment

19. Estimated cost per year (without depreciation) for service and parts

20. Estimated cost (salaries, equipment, maintenance, etc.) per student hour of use

21. Student fee for use of lab per semester
or per quarter

22. If you were starting over, what items of equipment would you purchase?

23. Which are the least useful or least justifiable items in your present lab?

(Signed)
Position Dept.
Institution Address

APPENDIX III: List of Language Laboratories, 1957-58

Language Laboratories in Secondary Schools

School	*Languages*
Arkansas	
El Dorado High School, El Dorado	French, Spanish
California	
Alhambra High School, Alhambra	French, Spanish, German, Latin
Cubberley High School, Palo Alto	Spanish
Ramona Convent High School, Alhambra	French, Spanish
Saint Monica's High School, Santa Monica	French, Spanish
Connecticut	
Andrew Warde High School, Fairfield	French, Spanish, German, English
Choate School, Wallingford	French, Spanish, German
Conard High School, West Hartford	French, Spanish, German, Latin
Greenwich High School, Greenwich	French, Spanish, German, Latin
Manchester High School, Manchester	French, Spanish
Delaware	
Delaware City Public School, Delaware City	Spanish
Newark Senior High School, Newark	French, Spanish, German
District of Columbia	
McKinley High School	French, Spanish
Sidwell Friends School	French, Spanish
Florida	
Hialeah High School, Hialeah	Spanish
Leon High School, Tallahassee	French, Spanish
University High School, Tallahassee	Spanish

School	*Languages*
Illinois	
Galesburg High School, Galesburg	French, Spanish
Luther High School, Chicago	———*
Rich Township High School, Park Forest	French, Spanish, German
Louisiana	
St. Scholastica Academy, Covington	———
Maine	
Lewiston High School, Lewiston	French
Waynflete School, Portland	French, Spanish
Maryland	
Bethesda-Chevy Chase High School, Montgomery County	French, Spanish
Walter Johnson High School, Rockville	French
Wheaton High School, Wheaton	French
Massachusetts	
Assumption Preparatory School, Worcester	French
Concord High School, Concord	French, Spanish
Lynn Classical High School, Lynn	French, Spanish
Newton High School, Newtonville	Russian
Michigan	
Ann Arbor High School, Ann Arbor	French, Spanish, German, Russian
Central High School, Detroit	French
Denby High School, Detroit	Spanish, German
Mumford High School, Detroit	French
Pershing High School, Detroit	French
Redford High School, Detroit	French
Minnesota	
St. Paul Academy, St. Paul	French
University High School, Minneapolis	French, Spanish, German, Russian
Missouri	
Jefferson City Senior High School, Jefferson City	———
John Burroughs School, Clayton	French, Spanish, German
Mother of Good Counsel Seminary, Warrenton	Latin
Nebraska	
Lincoln High School, Lincoln	French, Spanish, Latin

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*—— indicates incomplete information.

School	*Languages*
New Hampshire	
St. Paul's School, Concord	French, Spanish, German
New Jersey	
Fair Lawn High School, Fair Lawn	French, Spanish, German, Italian, Latin
Morristown High School, Morristown	French, Spanish, German
Summit Senior High School, Summit	French, Spanish
New Mexico	
Alamogordo High School, Alamogordo	Spanish
New York	
Brighton High School, Rochester	French, Spanish, German
The Harley School, Rochester	French, Spanish, Latin
Herricks Senior High School, New Hyde Park, Long Island	——
Horace Greeley School, Chappaqua	French, Spanish
Kingston High School, Kingston	French, Spanish, German
Manhasset High School, Manhasset	——
Mont Pleasant High School, Schenectady	French, German, Latin
Park School of Buffalo, Snyder	French
Scarsdale High School, Scarsdale	——
Syosset High School, Syosset	——
Ohio	
University High School, Columbus	French, Spanish
Pennsylvania	
Elkins Park, Cheltenham Township	——
Radnor High School, Wayne	French, Spanish
Rhode Island	
Portsmouth Priory, Portsmouth	——
Texas	
Harlingen High School, Harlingen	Spanish
Midland High School, Midland	French, Spanish
Washington	
A. C. Davis Senior High School, Yakima	French, Spanish, German

Language Laboratories in Colleges and Universities

Institution	*Languages*
Alabama	
Spring Hill College, Spring Hill	French, Spanish, German
State Teachers College, Florence	———*
Arizona	
American Institute for Foreign Trade, Phoenix	French, Spanish, Portuguese
Arkansas	
University of Arkansas, Fayetteville	French, Spanish, German, Russian
California	
College of the Holy Names, Oakland	French, Spanish, German, Italian
El Camino College, El Camino	French, Spanish, German
Immaculate Heart College, Hollywood	French, Spanish, German
Oakland Junior College, Oakland	French, Spanish, German
Occidental College, Los Angeles	French, Spanish
Palomar College, San Marcos	French, Spanish, German
Pasadena City College, Pasadena	French, Spanish, German, Latin
Pomona College, Claremont	French, Spanish, German, Italian, Russian, Chinese
Riverside College, Riverside	French, Spanish, German
San Diego State College, San Diego	French, Spanish, German
San Jose State College, San Jose	French, Spanish, German
Stanford University, Stanford	French, Spanish, German, Italian
St. Mary's College, St. Mary's	French, Spanish, German
University of California, Berkeley	French
University of California, Los Angeles	French
University of California, Riverside	French, Spanish, German
University of California, Santa Barbara	French, Spanish, German
Ventura College, Ventura	French, Spanish, German
West Contra Costa Junior College, Richmond	French, Spanish, German

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*——— indicates incomplete information.

Institution	*Languages*
Colorado	
Colorado School of Mines, Golden	English
Colorado State College of Education, Greeley	French, Spanish, Italian
University of Colorado, Boulder	French, Spanish, German, Italian, Russian
University of Denver, Denver	French, Spanish, German
Connecticut	
Fairfield University, Fairfield	—
Hartford Seminary Foundation, Hartford	French, Spanish, German, English, Greek, Hakka, Hausa, Hebrew, Hindustani, Ilocano, Indonesian, Japanese, Kikongo, Kpelle, Malay, Mano, Persian, Portuguese, Shona, Thai, Tiv, Turkish.
Wesleyan University, Middletown	French, Spanish, German, Russian
Yale University	French, Spanish, German, Russian
Yale University (Inst. of Far Eastern Languages)	Chinese, Japanese, Korean
Delaware	
University of Delaware, Newark	French, Spanish, German, Russian, Japanese
District of Columbia	
American University	English
District of Columbia Teachers College	French, Spanish
Dunbarton College of Holy Cross	French, Spanish, German
George Washington University	French, Spanish, Russian
Georgetown University:	
College and School of Foreign Service	French, Spanish, German, Chinese, Russian
Institute of Languages and Linguistics	French, Spanish, German, Arabic (Jerusalem and Egyptian), Chinese, Italian, Polish, Portuguese, Russian, Serbo-Croatian, Swedish
Trinity College	French, Spanish, German, Chinese
Florida	
Florida State University, Tallahassee	French, Spanish, German, Italian, Portuguese, Russian
Rollins College, Winter Park	—
Stetson University, De Land	French, Spanish, German
University of Florida, Gainesville	French, Spanish, German
University of Miami, Coral Gables	French, Spanish, German, Hebrew, Italian, Russian

Institution	*Languages*
Georgia	
Emory University, Emory University	French, Spanish, Italian, Portuguese
Georgia State College for Women, Milledgeville	French, Spanish, Italian
University of Georgia, Athens	French, Spanish, German, Italian, Russian
Hawaii	
University of Hawaii, Honolulu	French, Spanish, German, Chinese, Hawaiian, Japanese, Korean, Russian
Idaho	
Boise Junior College, Boise	French, Spanish, English
Idaho State College, Pocatello	French, Spanish, German, Russian
University of Idaho, Moscow	French, Spanish, German, Italian, Russian
Illinois	
Barat College, Lake Forest	French
Blackburn College, Carlinville	French, Spanish, German
College of St. Francis, Joliet	French, Spanish, German
Eastern Illinois University, Charleston	French, Spanish, German
Illinois State Normal University, Normal	French, Spanish, German
Milliken University, Decatur	French, Spanish, German
Mundelein College, Chicago	French, Spanish, German, Greek, Latin
North Park College and Theological Seminary, Chicago	French, Spanish, German, Swedish
Rosary College, River Forest	French, Spanish, German, Italian, Portuguese
St. Xavier College, Chicago	French, German
University of Illinois, Urbana	Spanish, Italian
Wheaton College, Wheaton	French, Spanish, German
Indiana	
DePauw University, Greencastle	French, Spanish, German, Greek, Latin
Earlham College, Richmond	French, Spanish, German, Russian
Goshen College, Goshen	French, Spanish, German
Hanover College, Hanover	French
Indiana University, Bloomington	French, Spanish, German, Classics, English, Indian language, Italian, Portuguese, Russian
Purdue University, Lafayette	French, Spanish, German, Russian
St. Meinrad College, St. Meinrad	French, Spanish, German
Wabash College, Crawfordsville	French, Spanish, German

Institution	*Languages*
Iowa	
Central College, Pella	French, Spanish, German
Coe College, Cedar Rapids	French, Spanish, German
Iowa State Teachers College, Cedar Falls	French, Spanish, German
State University of Iowa, Iowa City	French, Spanish, German, Chinese, Greek, Italian, Latin
Kansas	
Mount St. Scholastica College, Atchison	Spanish
University of Kansas, Lawrence	French, Spanish, German, Danish, English, Icelandic, Italian, Norwegian, Portuguese, Russian, Swedish
University of Wichita, Wichita	French, Spanish, German
Washburn University of Topeka, Topeka	French, Spanish, German
Kentucky	
Nazareth College, Louisville	French, Spanish, Italian
Western Kentucky State College, Bowling Green	French, German
Louisiana	
Louisiana State University, Baton Rouge	French, Spanish, German
Louisiana State University, New Orleans	——
McNeese State College, Lake Charles	French, Spanish, German
Southern University, Baton Rouge	French, Spanish, German
Southwestern Louisiana Institute, Lafayette	French, Spanish
Tulane University of Louisiana, New Orleans	French, Spanish, German, English
Maine	
Colby College, Waterville	French, Spanish, German
University of Maine, Orono	French, Spanish, German
Maryland	
Hood College, Frederick	French, Spanish, German
St. Joseph College, Emmitsburg	French, Spanish
United States Naval Academy, Annapolis	French, Spanish, German, Italian, Portuguese, Russian
Massachusetts	
Anna Maria College for Women, Paxton	French, Spanish
Bradford Junior College	French, Spanish, German
Clark University, Worcester	French, Spanish
College of the Holy Cross, Worcester	French, Spanish, German
Emmanuel College, Boston	French, Spanish German, Italian, Polish, Russian

Institution	*Languages*
Massachusetts Institute of Technology	French, German, English
Mount Holyoke College, South Hadley	French, Spanish, German, Italian, Russian
Regis College, Weston	French, Spanish, German, Italian, Russian
Smith College, Northampton	French, Spanish
University of Massachusetts, Amherst	French, Spanish, German, Italian, Russian
Wellesley College, Wellesley	French, Spanish, Italian, Russian
Williams College, Williamstown	French, Spanish, German
Michigan	
Eastern Michigan College, Ypsilanti	French, Spanish, German, English
Hope College, Holland	French, Spanish, German
Kalamazoo College, Kalamazoo	French, Spanish, German, Russian
Mercy College, Detroit	French, Spanish, German, Latin
Michigan State University, East Lansing	French, Spanish, German, Italian, Japanese, Russian
Siena Heights College, Adrian	French, Spanish
University of Detroit, Detroit	French, Spanish, German
University of Michigan, Ann Arbor	French, Spanish, German, Arabic, Chinese, English, Latin, Russian
Wayne State University, Detroit	French, Spanish, German, English, Italian, Polish, Russian
Western Michigan University	French, Spanish, German
Minnesota	
Bethel College, St. Paul	———
College of St. Catherine, St. Paul	French, German
College of St. Scholastica, Duluth	French, Spanish, German
College of St. Teresa, Winona	French, Spanish, German, English, Latin
Macalester College, St. Paul	French, Spanish, German, Greek, Italian, Latin, Persian, Russian
St. John's University, Collegeville	French, Spanish, German
University of Minnesota, Minneapolis	French, Spanish, German, Greek, Latin, Russian
Missouri	
Fontbonne College, St. Louis	French, Spanish, German
Junior College of the School of the Ozarks, Point Lookout	French, Spanish, Italian, Portuguese
Rockhurst College, Kansas City	French, Spanish, German
Stephens College, Columbia	French, Spanish, German, Italian
University of Missouri, Columbia	French, Spanish
Washington University, St. Louis	French, Spanish, German, Russian
Montana	
Montana State University, Missoula	French, Spanish, German, Italian, Russian

Institution	*Languages*
Nebraska	
University of Nebraska, Lincoln	French, Spanish
University of Omaha, Omaha	French, Spanish, German
New Hampshire	
University of New Hampshire, Durham	French, Spanish
New Jersey	
College of St. Elizabeth, Convent Station	French, Spanish, German, Russian
Princeton University, Princeton	French, Spanish, German
St. Peter's College, Jersey City	French, Spanish, German, Italian, Russian
New Mexico	
St. Michael's College, Santa Fe	Spanish, English
University of New Mexico, Albuquerque	French, Spanish, German, Russian
New York	
Bard College, Annandale-on-Hudson	French, Spanish, German
Barnard College, New York City	French, German, Italian
Brooklyn College, Brooklyn	French, Spanish, German, Chinese, Hebrew, Italian, Russian
Canisius College, Buffalo	French, Spanish, German
City College of the City of New York, New York City	French, Spanish, Italian, Portuguese
Colgate University, Hamilton	French, Spanish, German, Italian, Russian
College of Mount St. Vincent, New York City	———
College of St. Rose, Albany	———
Columbia University, New York City	French, German, Chinese, English, Irish, Japanese, Persian, Russian
Columbia University, Teachers College	French, Spanish, German, English
Cornell University, Ithaca	French, Spanish, German, Burmese, Chinese, Czech, Hindi, Italian, Indonesian, Portuguese, Rumanian, Russian, Thai
D'Youville College, Buffalo	French, Spanish, German
Elmira College, Elmira	French, Spanish, German, Italian
Finch College, New York City	French, Spanish, Italian
Fordham University (Inst. of Contemporary Russian Studies) NYC	Russian
Hobart and William Smith Colleges, Geneva	French, Spanish, German, Italian, Russian
Harpur College, Endicott	French, Spanish, German, Italian, Russian
Houghton College, Houghton	Spanish

Institution	*Languages*
LeMoyne College, Syracuse	French, Spanish, German, Italian
Notre Dame College, Staten Island	—
Queens College of the City of New York, Flushing, L. I.	French, Spanish
Rosary Hill College, Buffalo	French, Spanish, German
St. Bernardine of Siena College, Loudonville	French, Spanish, German
St. John's University, Jamaica	French, Spanish, German, Italian
Skidmore College, Saratoga Springs	French, Spanish, German
Syracuse University, Syracuse	French, Spanish, Portuguese
Union College and University, Schenectady	French, Spanish, German, Italian, Russian
United States Military Academy, West Point	French, Spanish, German
University of Buffalo, Buffalo	French, Spanish, German, Russian
University of Rochester, Rochester	French, Spanish, German
Wells College, Aurora	French, Spanish, German, Italian

North Carolina

Davidson College, Davidson	French, Spanish, German
Duke University, Durham	French, Spanish, German
High Point College, High Point	French, Spanish, German
University of North Carolina, Chapel Hill	French, Spanish, German
Woman's College of North Carolina, Greensboro	French, Spanish

Ohio

Baldwin-Wallace College, Berea	French, Spanish, German
Denison University, Granville	French, Spanish, German
Hebrew Union College, Cincinnati	Hebrew
Kent State University, Kent	French, Spanish, German, Russian
Marietta College, Marietta	French, Spanish, German
Miami University, Oxford	French, Spanish
Oberlin College, Oberlin	French, Spanish, German, Italian, Russian
Ohio Northern University, Ada	French, Spanish, German, Russian
Ohio Wesleyan University, Delaware	Spanish
Otterbein College, Westerville	French, Spanish, German, Greek
Western College for Women, Oxford	French, Spanish, German, English
Western Reserve University, Cleveland	French, Spanish
Wittenberg College, Springfield	French, Spanish, German

Oklahoma

Benedictine Heights College, Tulsa	French, Spanish
Bethany-Nazarene College, Bethany	German, Spanish
Oklahoma College for Women, Chickasha	French, Spanish
University of Oklahoma, Norman	French, Spanish, German, Hebrew, Italian, Portuguese

Institution	*Languages*
Pennsylvania	
Albright College, Reading	French, Spanish, German
Allegheny College, Meadville	———
Chatham College, Pittsburgh	French, Spanish, German
College Misericordia, Dallas	French, German
Dickinson College, Carlisle	French, Spanish
Franklin and Marshall College, Lancaster	French, Spanish, German, Greek, Latin, Russian
Gannon College, Erie	French, Spanish, German, Italian, Russian
Gettysburg College, Gettysburg	French, Spanish
Holy Family College, Torresdale	French, Spanish, German
Immaculata College, Immaculata	French, Spanish, German, Italian
Lafayette College, Easton	French, Spanish, German, Russian
LaSalle College, Philadelphia	French, Spanish, German, Italian, Russian
Lehigh University, Bethlehem	———
Pennsylvania State University, University Park	French, Spanish
Rosemont College, Rosemont	French, German
State Teachers College, Kutztown	French, Spanish
Swarthmore College, Swarthmore	French, Spanish, German, Russian
Temple University, Philadelphia	French, Spanish, German, Hebrew, Italian, Russian
University of Pennsylvania, Philadelphia	French, Spanish
Puerto Rico	
Catholic University of Puerto Rico, Ponce	French, Spanish, German, English, Italian
South Carolina	
Converse College, Spartanburg	French, Spanish, German, Italian
South Dakota	
South Dakota State College, Brookings	French, Spanish, German
University of South Dakota, Vermillion	French, Spanish, German
Tennessee	
Fisk University, Nashville	French, Spanish, German
George Peabody College for Teachers, Nashville	French, Spanish
University of Tennessee, Knoxville	French, Spanish, German, Italian, Russian
Vanderbilt University, Nashville	French, Spanish, German

Languages	*Institution*
Texas	
Baylor University, Waco	English
Midwestern University, Wichita Falls	French, Spanish, German
Our Lady of the Lake College, San Antonio	French, Spanish, German, English
Texas Woman's University, Denton	French, Spanish, English
University of Texas, Austin	French, Spanish, German
Utah	
Brigham Young University, Provo	French, Spanish, German, English, Italian, Japanese, Portuguese, Russian
University of Utah, Salt Lake City	French, Spanish, German, Russian
Vermont	
Middlebury College, Middlebury	French, Spanish, German, Russian
Virginia	
College of William and Mary, Williamsburg	French, Spanish, Russian
Hampden-Sydney College, Hampden-Sydney	French, Spanish
Longwood College, Farmville	French, Spanish
Madison College, Harrisonburg	French, Spanish, German
Mary Washington College, Fredericksburg	French, Spanish
Randolph-Macon Woman's College, Lynchburg	French, Spanish, German, Italian, Russian
Sweet Briar College, Sweet Briar	French, Spanish, German, Italian
University of Virginia, Charlottesville	French, Spanish, Italian
Virginia Military Institute, Lexington	Spanish
Virginia State College, Petersburg	French, Spanish, German
Westhampton College, University of Richmond, Richmond	French, Spanish
Washington	
State College of Washington, Pullman	French, Spanish, German, Swedish
University of Washington, Seattle	French, Spanish, German, English, Italian, Norwegian, Russian
Wisconsin	
Edgewood College of the Sacred Heart, Madison	French. Spanish
University of Wisconsin, Madison	French, Spanish, German, Arabic, Chinese, Hebrew, Russian, Scandinavian

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